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PEDIATRICS

A SEMI-MONTHLY JOURNAL

DEVOTED TO THE STUDY OF

DISEASE IN INFANTS AND CHILDREN

DILLON BROWN, M.D.,
NEW YORK

GEORGE CARPENTER, M.D.,
LONDON

VOLUME X.

July 1st to December 15th, 1900

VAN PUBLISHING COMPANY
254 WEST FIFTY-FOURTH STREET, NEW YORK

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FEB 18 1901
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VOL. X. JULY 1st, 190 No. 1

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ORIGINAL ARTICLES

INFANTILE AMAUROTIC FAMILY IDIOCY—REPORT OF A CASE AND ITS AUTOPSY.

By J. HERBERT CLAIBORNE, JR., M.D.,

New York.

IN 1881 Waren Tay[1] described a case of symmetrical changes at the macula lutea in a child of 12 months. The child could hold itself upright with difficulty, and could move its limbs but slightly. Its intellectual development was backward. At the first examination, the optic discs were completely normal, but at the macula there was a plain, diffuse white plaque, more or less round, in the center of which there was a brownish-red spot, which marked itself from the surrounding region. The picture was quite similar to that seen in embolism of the central retinal artery. At first Tay thought the condition a congenital change, but five months later he observed that the optic discs had become atrophic, while the changes around the macula had remained the same.

Three years later he discovered three other cases in the same family; in all the ophthalmoscopic picture was the same, and all the three cases died before the end of the second year of the disease. Later, between the years 1885, 1888, the same ophthalmoscopic picture was described by Magnus[2], Goldzieher[3], Wadsworth[4], Knapp[5], and Hirschberg[6]. In 1887, without knowledge of the preceding publications, Dr. B. Sachs[7] reported a case of this condition which impressed him as a phase of idiocy, and was particularly interesting on account of the changes which he observed in the cortical cells. The family character of the affection was suggested to him after he had observed 4 cases of this remarkable affection in 2 families.

Kingdon, of Nottingham, then published a case in which he showed that the picture described by the eye-surgeons belonged to that disease which Sachs had delineated. In 1894, Carter[8]. of New York, collected the cases that had been published up to that time, adding one of his own, with an opthalmoscopic drawing of the fundus-picture. In 1898 Sachs reviewed the subject, and tabulated 29 cases of this affection; his analysis was based upon 10 cases. I myself have had 5 cases under my notice, and my observations of the symptoms of this disease tally so nearly with those of Sachs, that I could modify his description in but a slight degree. At birth and for the first few weeks after birth the child appears entirely normal. Between the first and the ninth month, in general terms, the child ceases to take interest in its surroundings; its eyes may or may not be rolled about; it cannot hold up its head, and there are irregular, purposeless movements of the limbs, head and body. I have observed a great tendency to sleepiness; the parents have at times volunteered this information; at others I have observed it myself. The child either falls forward, or slips down on its back when the parent attempts to make it sit up straight in the lap. I have observed that it slides downward more frequently than it falls forward, and I have failed to observe any inclination to fall sideways. I have at times observed a vermicular movement of the fingers, which suggested athetosis. I wish to lay stress on the fact that the parents have noticed somnolence, and this seems to me more marked than the idiocy or physiologic sluggishness which suggests the latter condition. In one case I observed distinct hydrocephalus; there was a distinct water wave felt on filiping the head with the finger. The weakness of the extremities seems to increase slowly until practically diplegia exists. Sometimes this has a spastic character and sometimes not. Some have observed that the reflexes are increased, normal or diminished. The electric excitability of the nerves and muscles is normal, as a rule, though Koplik[9], has detailed a case in which the reaction to the faradic current was slightly diminished. By the end of the year the child becomes totally blind, the optic nerve dead white and the idiocy is pronounced. About the end of the second year, a slowly developing marasmus closes the scene. Sachs, Kingdon[10], Koplik and Higier[11] have observed nystagmus, strabismus and hyperakusis. Sachs has observed diminution in the power of hearing in two cases.

In view of the general sluggishness of the faculties due to the progressive idiocy, I think it difficult to make any definite observation as to the special senses, barring sight, in these cases. I do not agree with Sachs that the change at the macula is the most striking symptom, for I think that the idiocy is the most observable and the most striking, but I should go so far as to say that the existence of the macular changes is necessary to establish the diagnosis.

On January 26, 1898, Dr. F. W. Chamberlin of this city referred Dorothy W——, a female infant of 11 months, to me for diagnosis and treatment. There was double ophthalmoplegia, complete, of the third nerve. The mother was healthy, but the father had pulmonary tuberculosis. There was no consanguinity between the parents.

The child was carried to the ninth month and was delivered in the natural way. About nine months after its birth the mother noticed one day that the left eye of the child was turned outward, and several weeks after that the upper lid drooped. Three weeks after this Dr. Chamberlin noticed that the right commenced to turn outward and that the right lid drooped.

When I saw the patient the left eye was farther out than the right, and the left lid was lower than the right. Both pupils were moderately dilated, and responded sluggishly to light. Both optic discs were normal. The child had been remarkably bright and healthy since its birth. The mother had always been healthy, and as stated, the father had pulmonary tuberculosis. I suggested mercurial inunctions, which were employed, and the patient was brought to me again a trifle less than four months after the first visit. The mother stated that after the use of the inunctions the lids lifted and the eyes became straighter. Then the child developed great somnolence, could not hold up its head, or sit up straight, and fell backward or forward in the mother's lap. It developed nervous movements of the hands, arms and body. The paralysis of the third nerve in each eye was complete. At the macular region in each eye was a marked white area, more or less round, in the center of which the macula lutea shone as a cherry-red point. The optic nerves at that time were normal in appearance. The mother remarked that the intelligence of the child had become markedly diminished since the appearance of the eye symptoms.

I diagnosed infantile amaurotic family idiocy, and gave an unfavorable prognosis.

I then left the city for a period of six months, during which time I had no knowledge of the case. On my return, Dr. Chamberlin wrote me that the child died on May 5, 1899, after having shown for some time symptoms pointing to tumor of the brain. Dr. Chamberlin and Dr. L. Emmett Holt made an autopsy and discovered a tubercular tumor of the corpora quadrigemina of about the size of a hickory nut. There were also tubercular deposits in the lungs, bronchial glands, mesenteric glands, liver, spleen and kidneys.

I transcribe briefly the notes which Dr. Pooley has given me of a case of this affection which he has observed in his private practice.

An infant, 8 months of age, survivor of twins, its sister having died at 4 months. Soon after birth the eyes began to twitch. For the first three months it was extremely emaciated and then improved. Intelligence, backward; listless, and remains in one posture. Parents are not Jews, and are not related by blood. There is constant nystagmus; pupils contracted; at macula in each eye a cherry-red spot surrounded by a grayish-white opacity; optic discs yellowish-white with small arteries. Apparently the child was blind; it died shortly afterward.

Carter was the first to point out the apparent fact that the children who are the victims of this disease are of Hebrew origin. Sachs corroborated this view by observing that the same was true of all the cases extant at the time of his review of the subject. My own case and that of Dr. Pooley disprove this view completely. The parents of Dorothy W— were Gentiles and so were those of Dr. Pooley's patient.

There can be no doubt that the great majority of these cases are of Hebraic stock, but the two exceptions prove that such is not always the case.

Indeed, commenting on this point, Sachs says in his paper that if this is a purely racial affection it is singular that other similar allied conditions have been described among all races and nations. It may be definitely stated that infantile amaurotic idiocy does not occur in Hebrews alone.

It is the object of this paper in part to call special attention to this subject before the profession at large so that abundant evidence on this point may be collected.

It has been suggested that blood-relationship of parents, psychoses, trauma during child-bearing, may lie at the bottom of this disease. The "family character" is so marked that Sachs has thought it worth while to use this term in naming the disease. His observations and those of Waren Tay lend considerable color to this view. More extended observations will possibly establish this as an undoubted fact. My own case shows very conclusively the disease is at least associated with a tubercular tumor of the corpora quadrigemia and with tubercular deposits in the lungs, bronchial glands, mesenteric glands, liver, spleen, and kidneys; in short, general tuberculosis.

The investigations of the etiology have been mainly directed toward the cellular changes in the central nervous system, though Sachs observes that in one of his cases all the inner organs were examined without finding any evidence of syphilitic lesion. I have failed to find any reason for supposing that syphilis lies at the root of this matter, and I think the majority of observers will support me in that view. As far as I have seen no one has suggested tuberculosis as a possible cause; but it is to be hoped that future investigation will be directed along this line also.

Sachs, Kingdon, Koplik, and Higier observed nystagmus and strabmismus as symptoms; in my own case there was double third nerve paralysis. Incoordination and forced, irregular, purposeless movements have been observed in all. These symptoms are consistent with tumor of the corpora quadrigemina. A tumor was found in my case. In all future autopsies special examination should be made of this region.

The similarity of the disease to hereditary spastic paralysis, to the ataxia of Friedreich, and to the ataxia of Nonne-Marie, has been mentioned. It seems to me that it is only necessary to apply the test afforded by the fundus picture to settle the differential diagnosis.

It is a matter of considerable interest to me to select a correct name to describe the condition. Before doing this it is well to have established beyond reasonable doubt the nature and cause of it.

The history and autopsy of my case has led me to what seems a reasonable doubt whether the series of symptoms described under the head of amaurotic family idiocy or infantile amaurotic family idiocy, are simply an attendant train to general tuberculosis, to a tumor having its seat in the corpora quadrigemina, or whether they themselves constitute a specific entity, a separate, peculiar disease. I think it is only just to regard the matter as *sub judice*. The fact that all the cases die, as a rule, from marasmus, adds a considerable amount of weight to the notion that tuberculosis is either the cause or a factor in its existence.

The pathologic investigation of this disease seems to have been directed toward the central nervous system, the gross macroscopic and the minute macroscopic findings. According to Sachs, the external configuration of the brain seems to have shown that the fissures are uncommonly pronounced and exhibit distinct peculiarities such as are accustomed to be found in the brains of the lower order of development. The microscopic examinations of sections taken from all parts of the cortex show that the chief changes occur in the great pyramidal cells. It is especially noteworthy that the great ganglia, the chiasm, the pons, and the medulla are entirely normal. There is a wide-spread disturbance in the cortex, the retina, and the spinal cord. The great pyramidal cells, for the most part, are lacking in the cortex or are strikingly degenerated. The question arises, as Sachs has suggested, whether this change is to be considered as a primary degeneration, or such a cell change as is observed in the arrest of development. Waren Tay, Knapp and others have suggested that the changes in the retina are congenital. Kingdon regards the changes in the spinal column as secondary degeneration, though doubt is thrown upon this view by the fact that in one of the cases of Sachs no changes were observed in the pyramidal tracts, in the medulla and pons.

If one is to regard the changes in the spinal column as consistent with those in the cortex, a secondary degeneration of the pyramidal fibers is to be admitted. In short, it seems to me reasonable to regard the whole matter as an arrest in development in the central nervous system.

The gravity of the situation is accentuated by the fact that the condition invariably leads to a fatal termination, whereas there are many forms of idiocy that permit the unfortunate subject to grow to adult life and pass on even to middle or old age. It is consistent to compare here the arrest of development in intellect in this disease with that associated with retinitis pigmentosa.

Inasmuch as the etiology of the disease is still unsettled, I consider it difficult to apply to it a name that is suggestive of its origin. But the clinical features are fairly clearly outlined, and so, in place of a name indicating the etiology, a name exhibiting the clinical features appears to be best. The name "infantile cerebral degeneration," is not satisfactory, for other parts than the cerebrum have been shown to be involved. The term "cerebral degeneration," for similar reasons is inappropriate. Sachs has suggested and applied the name "amaurotic family idiocy" to the condition. In view of the blindness that invariably follows, the term "amaurotic" is distinctive and correct. The word, "family," is to be admitted; the disease, in a large number of instances occurred in more than one member of the same family. Of twenty-seven cases collected by Sachs, seventeen were found to occur in the same families. Waren Tay also found three cases in the same family. These facts justify the use of the word "family" in the description of the disease. The definition of the condition, idiocy, should be one thing as applied to adults and another as applied to infants.

Idiocy for the adult is possibly a mental condition which is characterized by a more or less complete obliteration of the intellectual and moral faculties. But in infants, if it exists at all, it may be said to be a modification either in the direction of excess or diminution of the instinctive acts and physiological reflexes. On this interpretation I should be inclined to admit the term "idiocy." Dr. Sachs has suggested the name "amaurotic family idiocy." If, however, one thing is established beyond peradventure, it is the fact that the set of symptoms occurs in infants; therefore, I propose, as a more distinctive and descriptive name, "infantile amaurotic family idiocy."

As stated, Sachs, in 1898, collected 27 cases, which he tabulated. Inquiry at the children's department of the Vanderbilt Clinic showed that 7 cases had been seen there. Most of these were referred to the eye surgeons for corroboration of diagnosis by the ophthalmoscopic examination. Five of these cases I have myself seen. If I add my own and the case of Dr. Pooley, 9 cases may be added to the compilation of Sachs. Indeed, it seems to me to be of very little interest to tabulate them any longer. Sufficient evidence has been brought forward to show that they are not so rare as was supposed; all the cases at the Vanderbilt clinic showed a Polish Jew origin, and I think if careful scrutiny is made in those cases which are shown to be of

Jewish origin, the fact will be developed that it by long odds occurs more frequently among the Jews from Poland. That it is not a purely racial matter, the cases described by Pooley and myself show. Of the cases observed at the Vanderbilt Clinic, 2 occurred in one family, so that there were 7 cases in 6 families.

More careful search into this matter may have revealed other cases among those families. There was no history of phthisis and no established consanguinity of parents.

My study of this subject seems to warrant me in formulating the following conclusions:

Under the terms amaurotic family idiocy, or infantile amaurotic family idiocy, have been grouped a number of cases with distinctive features.

The children are born apparently healthy, and remain so for several months; at the end of that time the parents notice sluggishness and somnolence; the child is unable to hold itself erect in the mother's lap, falls forward or backward, and frequently shows purposeless, irregular movements of head, body and limbs. These conditions increase to some degree as the disease progresses.

There is found at the macula of each eye a picture which strongly resembles that seen in embolism of the central retinal artery. Around the central point is a more or less oval grayish area, whose edges are not definitely lined, in the center of which the macula appears as a cherry-red spot in blondes and a dark-reddish brown spot in brunnettes. The period at which this picture arises has not been determined. It has always been seen and may reasonably be said to be an invariable and necessary concomitant of the disease. At first the optic disc is normal in appearance, but later shows that of complete atrophy. Some observers have recognized nystagmus, strabismus, hyperakusis, and one has observed double third nerve paralysis in one case, and distinct but mild hydrocephalic enlargement in another.

The termination is invariably death, which usually takes place before the end of the second year, generally toward the end of the first; one case alone has been known to live longer than two years. The majority of cases occur in children of Hebraic blood; a large number have been shown to be of Polish-Hebraic blood.

Investigation into the pathology has been directed chiefly toward the macroscopic and microscopic study of the central nervous system. Macroscopically the brain presents the appearances that are found in arrest of development. Microscopic examination of the cortex has shown that the greatest changes occur in the pyramidal cells; the chiasm, the pons, and the medulla have been found normal. Changes are also found in the retina and the spinal cord.

It seems reasonable to regard the changes in the nervous system as the result of arrest of development.

The etiology of the disease has not yet been established.

In view of the fact that in the case which serves as a text of this paper, general tuberculosis was found in the autopsy, and particularly in view of the existence of a tumor of the corpora quadrigemina, associated with ocular symptoms, consistent with tumor of that region, it seems pertinent that special attention be called to tuberculosis as a probable general cause and to the corpora quadrigemina as the seat of a lesion, at least in those cases in which there are eye symptoms consistent with tumor in that region.

The facts before us suggests this query: Are we justified in assuming that the symptoms exhibited by these cases constitute a definite entity, or is it more reasonable to assume that they are merely symptoms of a disease which has not yet been recognized?

39 West Thirty-sixth Street.

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POSTCRIPT—In this postscript the writer desires to call attention to the work of Dr. Wm. Hirsch, the results of whose investigations as to character of this disease are quite different from those of Sachs. Up to the time of Hirsch's investigations five autopsies had been done, two by Sachs and three by Kingdon and Russell. Their findings were practically the same, but Kingdon and Russell arrived at a distinctly different conclusion from Sachs' as to the character of the process. Sachs held the notion that there was an arrest of development in the central nervous system, and Kingdon and Russell that the condition was the result of a degenerative process. This left an open question.

Hirsch's investigations are restricted, according to his paper, to the findings in one case.

The autopsy in his case was performed four hours after death. He found an equal affection of the nerve cells throughout the entire nervous system, the main features of which were chromatolysis, swelling of the body of the cell, displacement of the nucleus, destruction and breaking off of the dendrites. The neuroglia was found to be normal, and there were no changes in the bloodvessels of the entire system. There is then an obvious discrepancy between these statements; one view being that the changes were restricted to the central nervous system, the cerebral cortex (Sachs, Kingdon and Russell) and the other that they occurred throughout the entire nervous system (Hirsch).

Hirsch attributes the difference in findings to the difference in the hardening processes. Sachs, Kingdon and Russell used Müller's fluid for hardening the brain and cord, and this method does not permit the study of the minute structure of the cells (Hirsch).

Hirsch also failed to find any abnormal conditions on macroscopic inspection of the brain. It will be recollected that Sachs stated that he found macroscopic changes in one case quite consistent with an arrest of development, widening of fissures, etc.

Dr. W. A. Holden's examination of the retina showed changes in the ganglion cells of the vesicular layer. These cells were found swollen and in view of the fact that at the macula alone there are several layers of these cells, while elsewhere there is only one, a reasonable explanation of the white area at the macula is afforded. Two theories confront us, an arrest of development or a degenerative process.

Although the findings of Sachs and Kingdon and Russell were practically the same, they have arrived at two different conclusions.

Hirsch's investigations led him to take the view of Kingdon and Russel. The weight of evidence is clearly in favor of the condition being due to a degenerative process. Hirsch argues that both clinical and anatomic facts are against the theory of an arrest of development. He maintains that the fact that the subjects of this disease are born healthy and remain so for some months before the symptoms develop is evidence that the process is a degenerative one. It is equally obvious to the writers that the same fact may be interpreted in favor of the theory of an arrest of development. For, in order that there may be an arrest of development, there must, in the nature of things, have been some development. The macroscopic character of the brain in Sachs's finding lends color to this view.

The changes in the cells, as described by Hirsch, are surely those of a degeneration. But it it is not at all unreasonable to the writer's mind that a degeneration shouid take place subsequent to an arrest of development. So that it seems to the writer that the microscopic changes in the nervous system are the changes of a degenerative process, but that it is still an open question as to whether the degeneration is a primary one due to a cause unknown at present,or a secondary one due to a primary arrest of development.

Hirsch has pointed out that the anatomic picture under the microscope corresponds in every respect to that found after experimental poisoning, and maintains that the total absence of any morbid changes in the bloodvessels or neuroglia, and the existence of the changes in the nerve cells exclusively, point to a virus which exerts a direct action on the cells. He has suggested the mother's milk (i.e., autoinfection) as a possible source of this poison. He remarks that the question is left open for further investigation.

He ends his excellent and exhaustive paper with the statement: "So much, however. I think can be said with certainty to-day—that this peculiar affection does not consist of an arrest of development but is an acquired disease affecting the nerve cells of the entire system, produced by some poison."

From the study of the entire subject, taking particularly into account the work of Hirsch, it seems to the writer that this conclusion alone can be sure.

In the entire nervous system of those affected by this disease there are degenerative changes in the nerve cells. These changes are consistent with those produced by systemic poison.

J. H. Caiborne, M.D.

Rickets.—Thomson (*Clinical Treatment of Children*) recommends:

℞	Phosphorus	1 grain.
	Absolute alcohol	350 minims.
	Spirit of peppermint	10 "
	Glycerin up to 2 ounces.	

Six to 12 drops thrice daily after meals.

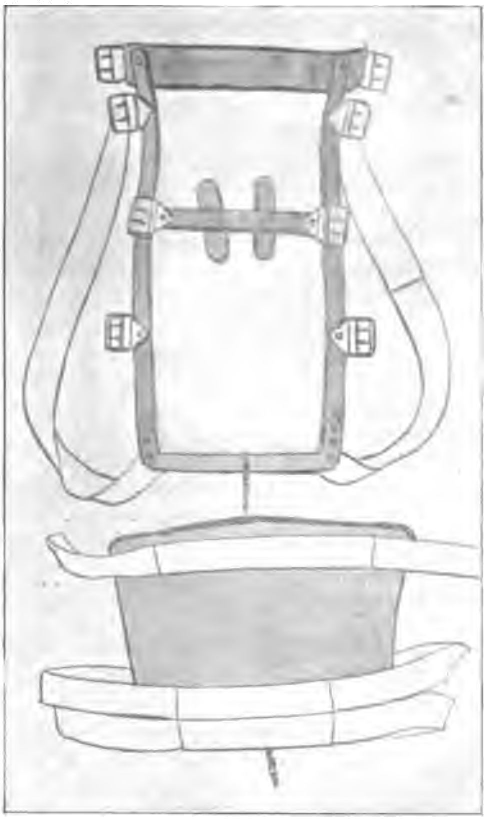
Philadelphia Medical Journal, March 31, 1900.

Naphthalin for Pinworms.—A. Borini (*Gaz. d. Osped. e. d. Clin.*, 1900, No. 3) recommends the exhibition of 1.5 gram of naphthalin *pro die* for the treatment of pinworms. Protracted cases are cured in short order, and within a few days not even eggs of the oxyuris are any longer to be found in the stools.—*Medical Age*, March 25, 1900.

A NEW BACK BRACE FOR POTT'S DISEASE.*

By JOHN DANE, M.D.
Boston, Mass.

THE brace, which is illustrated in the accompanying pictures, represents an attempt to combine the antero-posterior support of the Taylor Back Brace, with the protection against torsion that is furnished by the plaster jacket. The lower part of the brace consists of a light steel pelvic band, circling the back part of the pelvis, just above the trochanters. The two uprights, made of thin flat steel, are fastened firmly to this at a point just outside of the posterior



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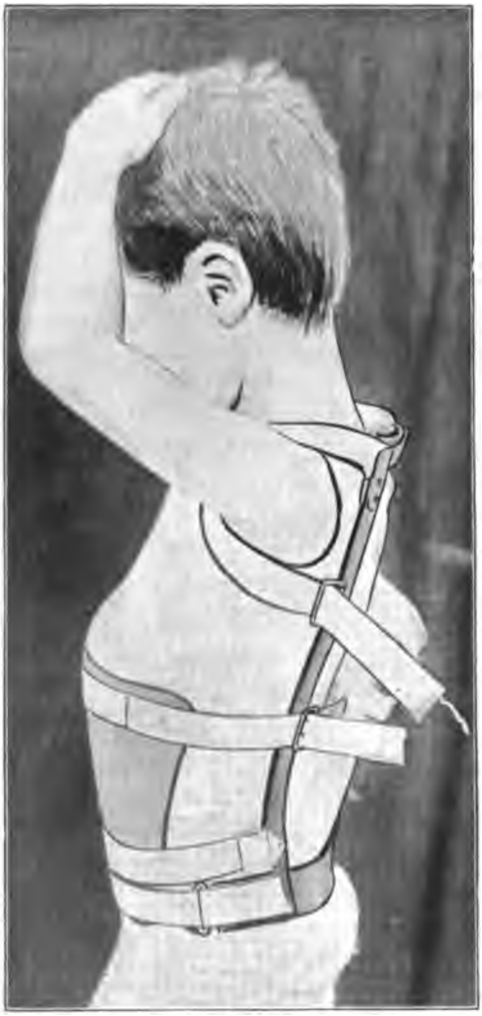
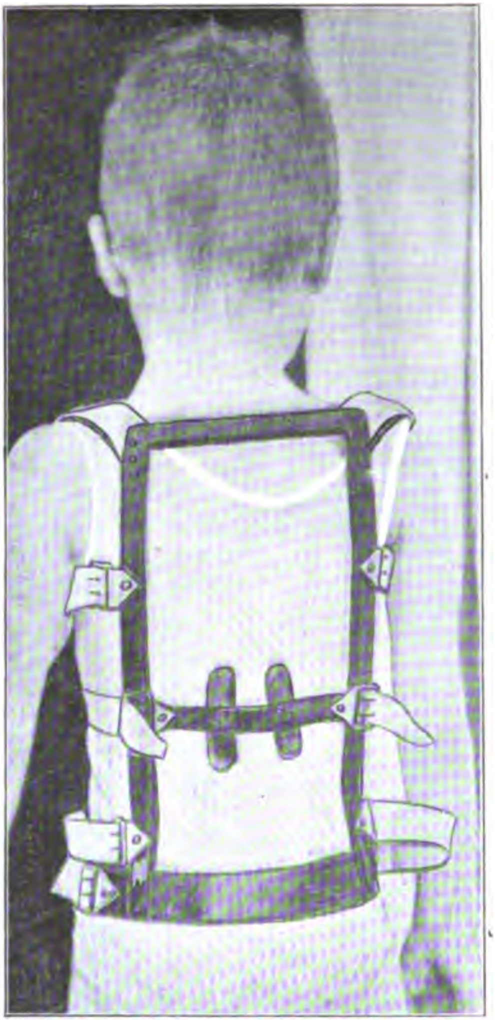
* Read before the American Orthopedic Association, at Washington, May 2, 1900.

superior spines. They are joined across the top by a piece of similar material, making the brace as wide as possible across the shoulders. The pad plates are riveted to a separate bar of steel, that is fastened to the upright by means of a flat-headed



screw. The opening for this screw upon the cross-bar is made in the form of a slot to allow for variations made in adjustment. The iron work, which is sufficiently light to be easily bent by wrenches, is faced on the side next to the patient with leather. Counter-pressure is obtained by an abdominal belt of rather thick leather, to which webbing straps are sewn; and padded straps are used to pull the shoulders back against the brace at its upper part. There is no apron nor



straps encircling the chest above the diaphragm. Ordinary buckles are riveted firmly to the brace. While acting as a lever-brace, by means of its pad plates, which press firmly against the transverse processes of the kyphos,—the great width of the brace gives it the advantage of a frame or cradle into which the patient is strapped. A firmer support for the whole thorax is thus obtained.

In disease of the lumbar regions this is very important in checking movements of rotation, and in the dorsal regions in restraining movements of the ribs. From the absence of central uprights, it is impossible to make pressure with this brace upon the spine above the disease, while the ease of adjusting the pad plates is greatly increased by making the bar which carries them completely and easily detachable. The absence of any pressure over the chest greatly increases the ease of breathing, while the height and width of the brace at the top, permits an excellent control of the shoulder girdle without contraction of the chest. Lastly, the simplicity of these braces reduces their cost to less than one-half that of the ordinary Taylor brace. The actual cost of its manufacture is between four and five dollars only.

Seaside Hospital of the Brooklyn Children's Aid Society.—The Children's Aid Society of Brooklyn has received a gift of $10,000 from two women for the building of an infants' hospital and a beach pavilion as an extension to its other buildings used in the summer at Coney Island. The hospital will be reserved for cases of critical illness. The main floor will be divided into a number of rooms, so as to permit mothers to be with their sick children.—*Medical Record.*

Intertrigo.—Ullmann (*Centralbl. f. d. ges. Therapie*) recommends the following dusting powder:

℞ Tannoform............................
Powdered Starch.......................
Finely powdered talcum...................āā ʒi
Philadelphia Medical Journal.

EDITORIAL COMMENTS

Toy-Pistols and Tetanus

Again the Fourth of July is at hand, and will be celebrated, as its predecessors, with the noise of toy-pistols and fire-crackers. The Fourth, and the few days preceding and following, are well-remembered by those who have worked in the larger surgical dispensaries of this city, by the large number of blank cartridge-wounds and powder-burns occurring, particularly in small boys, at this season. The wounds made by the wads from blank cartridges are frequently in the palm of the hand, and much deeper than one would be inclined to think. They usually go down to, if not through, the palmar fascia, and contain paper of which the wads are made together with more or less burnt powder. These wounds should all be opened fully at once, thoroughly cleansed, and mopped out with some strong antiseptic—pure carbolic, followed by alcohol, answers well. The wound should then be packed, a wet dressing applied, and the patient very carefully watched for symptoms of tetanus. One is apt to be careless in regard to such wounds, and consider that he has done his full duty when he has washed them out and applied a wet dressing, thinking to open them later should suppuration occur. The danger of suppuration is great, but the danger of tetanus must not be forgotten.

In a large surgical dispensary of this city, last July thirty-two wounds from toy-pistols and fifteen from powder-burns were treated. Of this number, three small boys who were wounded by the wads of toy-pistols developed tetanus and died within five days from the onset of the disease, in spite of treatment with antitoxin. It is worthy of note that in not one of the cases would the parents allow thorough opening and disinfection of the wound until after symptoms of tetanus had developed. Of the powder-burns, a man who had celebrated the Fourth with fire-crackers received a slight burn on the hand. He came in with trismus, and was sent at once to a hospital, where he died two weeks later of tetanus. During the same month about 2,000 open wounds were treated at this dispensary. Of this number only one developed tetanus. This was a youth who came in with cellulitis, following a traumatic amputation of the finger. He subsequently died of tetanus in one of the institutions of this city. Whether the fact that tetanus, following so frequently wounds from toy-pistols, be due to bacilli contained in the wad, or whether infection occur subsequently, has not been determined. The bacillus of tetanus is anaerobic and is found in dirt, particularly that about stables. These comparatively deep wounds occur most frequently in the grimy palms of small boys. So serious are they, that one might be considered justified in administering tetanus antitoxin as a prophylactic. This substance may be of great advantage when so used, although its curative powers, when the disease has developed, are certainly not marked.

We have undertaken a series of experiments to determine whether the bacillus tetani be contained in the paper of which the wads for the cartridges of toy pistols are made. Many boxes of cartridges were purchased in different localities in Manhattan and Brooklyn. As they were all made by three companies, it was only necessary to make three series of experiments.

The wads were carefully removed from fifteen cartridges of each maker and macerated in bouillon for several days. Then the bouillon was heated to 75° C. for thirty minutes for three successive days, so as to eliminate the less resistant organisms, as has been successfully accomplished by Kitasato in dealing with this micro-organism. Then five nutrient agar plates were made from each specimen and grown in the incubator under hydrogen for from one to seven days.

Several varieties of organisms were found, but none had the characteristic morphology of the bacillus of tetanus. Thinking that we might have eliminated the spores by heating the bouillon too often, in a subsequent series of experiments we only heated it once to 75 C. before inoculating the agar plates. Again we obtained a similar negative result. Lastly, plating was undertaken without preliminary heating of the bouillon. A very copious overgrowth of moulds rendered examination for the tetanus bacillus impracticable, as it occurred before the latter organism would have had time to develop had it been present. These experiments prove nothing, but may serve to lead some one to undertake to determine by other methods whether the cartridge itself be the remote cause of this affection. We should then be better enabled to procure legislative aid in the prevention of the sale of these dangerous toys. T.

ETIOLOGY OF SCARLATINA.

R. B. H. Gradwohl, in the *Interstate Medical Journal*, March, 1900, gives the result of some experiments directed towords clearing up this question. He wished to test the pathogenic character of the micrococcus of Class, of Chicago. He investigated seven cases of scarlet fever, and found the diplococcus of Class in the scales, the throat, the blood, and the urine. It was isolated in pure culture from the blood of several cases. He gives a detailed description of the morphology and biology of this germ.

The diplococcus was found to be pathogenic in mice, guinea pigs, and swine, and non-pathogenic in dogs, cats, rats, and rabbits. The micro-organism was easily recovered from the mice, and in each instance was found to be more virulent after its passage through these animals. In swine he found that the inoculation of the diplococcus was followed by a rash and by desquamation. On autopsy these animals showed acute nephritis. The writer believes that further investigation will show this germ to be the true etiologic factor of scarlatina.

CORRESPONDENCE

Open Safety Pin Swallowed by a Baby.

To the Editor of PEDIATRICS;

DEAR SIR: On June 10, 1899, I was hastily summoned to attend a baby, reported to be choking to death.

I arrived at the scene of distress, some five minutes later, and was informed that the baby had swallowed an open safety pin. I examined the mouth and throat, but was unable to find anything, but a number of lacerations of the roof of the mouth and fauces.

Being unable to see the pin, I decided to let the baby rest a few minutes, when it soon became reasonably quiet.

Dr. Wisner was now called, and instructed to bring some flexible male catheters. The gagging and choking ceased, and the baby swallowed some water by the time the doctor arrived.

A catheter was passed into the stomach without opposition. Being now sure that the pin had entered the stomach, we decided to wait for more urgent symptoms before interfering.

I remembered having read in PEDIATRICS (Vol. 5, Nos. 7 and 11) two reports of similar cases with favorable issues; I felt safe in presenting the brightest side of the case to the parents.

I now began making inquiries, and found the baby to be a plump and healthy boy of 7 months.

The child was sitting on the floor unattended, and had gotten the pin out of its stocking, which was pinned to the napkin.

Attention was directed to the baby by its choking and gagging, and the pin was then plainly in sight, with hinged end downward. It was at this time that the lacerations were produced by a neighbor, who tried to extract the pin with her fingers.

After the mouth had received antiseptic treatment, the mother was instructed to give the child all the bran gruel, oatmeal, rice, or bread it would take. Purgatives were forbidden, and the mother was instructed not to nurse the child for four hours.

Five days later, almost to the hour, the pin was found somewhat corroded and covered with mucus, in the napkin, with a large, soft stool.

The bowels were at no time constipated, nor were there any hemorrhages. The pin was of the ordinary type, 1⅝ inches long and 1 inch wide from point to shield.

There are a few points of interest in this case, not seen in either of the others. First, the short time occupied in reaching the stomach.—The pin entered it in less than one hour, as demonstrated by the catheter. Second, the rapidity with which it traversed the alimentary canal—five days. Third, the absence of hemorrhage. Fourth, the freedom from pain and fever. The child's nutrition was not disturbed, nor have there been any bad after-effects.

Faithfully yours,
James Kelly Hawes, M.D.,
629 Washington Street,
Columbus, Ind.

A Maternal Impression.

Fairland, Ind. Ter.

To the Editor of Pediatrics.

Dear Sir: As I believe in maternal impressions, I will report a case. Mrs. C—, Cherokee Indian, age 47, mother of eight normal children, in August, 1899, was delivered of a girl child who was normal except for the entire absence of right hand. Father of the child lost his right hand two years before. Later.—In December, 1898, he lost his balance while on the ice and fell upon the stump sustaining two incised wounds which bled quite freely. Mrs. C— witnessed the fall and assisted me in dressing the wounds. This seems to me like a clear case of maternal impression.

June 1, 1900. W. H. Ford., M.D.

SOCIETY REPORTS

AMERICAN MEDICAL ASSOCIATION—SECTION ON DISEASES OF CHILDREN.

ANNUAL MEETING, ATLANTIC CITY, N.J., JUNE 5 TO 8, 1900.

First Day, June 5, 1900—Afternoon Session.

The Chairman, Dr. EDWIN ROSENTHAL, of Philadelphia, presiding.

I. ADDRESS OF THE CHAIRMAN.

The Value of the Work of this Section and How to Advance It.—Dr. ROSENTHAL took for his theme the subject of collective investigation, and as an illustration of the value of this method of research, reported the results of an inquiry which he had instituted concerning the therapeutic efficiency and the ethical standing of diphtheria antitoxin. He sent over 4,000 letters to physicians who are using antitoxin, both in this country and abroad, and to the manufacturers of the remedy in various parts of the world. From the answers he received he concludes that: (1) The value of the specific character of the remedy is above question. Statistics from health boards and hospitals of 157 cities give a mortality of 38 per cent. without antitoxin, 14 per cent. when it was used. (2) The ethical character of the antitoxin manufactured in America is also above question. He found that the American manufacturers of the remedy have no patent nor copyright connected with the production of the antitoxin, but are selling it like any well known drug, simply on the merits of the preparation as guaranteed by the name of the maker. Inasmuch as the question of placing the remedy in the new issue of the Pharmacopeia is now being debated, the work now presented to the section should receive such consideration as the importance of the subject demands.

As a duty reposed in the chairman is to suggest an improvement in the work of the section, Dr. Rosenthal proposed that a collective investigation on typhoid fever be undertaken by the section. He said in part:

"I would suggest that at this meeting the members should appoint this or any other subject, and at the same time the new chairman may appoint, or the section may elect a committee, who, by collective means or personal investigation, shall present at the next meeting the result of their work; new remedies or new modes of treatment are always successful in the hands of the one who first suggested or originated them. When, however, a remedy has become universally successful its standing is assured. Antitoxin owes its standing to these means, and these results were mainly due to the pediatrist. Typhoid fever, in many respects, is better known than diphtheria, and, like it, has received the attention of the layman. Typhoid is a disease, the presence or absence of which from any community is a criterion of that community's culture, civilization, and, I might add, its political purity. Its presence shows not only the ignorance of the 'powers that be,' but the more than criminal negligence of those who are responsible. To the sanitarian its presence causes shame, and its absence brings pride.

"We owe, among other blessings, to the bacteriologist the knowledge of its causative factor, and the knowledge of its prevention. That it is 'water-borne' disease, the knowledge is so universal that it should be a badge of shame for any board of health to order the rule, 'boil your water before using.' I unfortunately reside where the 'powers that be' are callous to the cry of the people.

"We, as a representative body, cannot seek to prevent, for strange as it may seem, our purpose is looked upon as mercenary and our object personal gain. We can only hope to stay its ravages, and when it appears, to cure. As a disease with such constant dangers, with so numerous complications, always exists in a community, our purpose to study its treatment, will. of a certainty, receive universal thanks.

"It appears to be a mistaken belief that typhoid fever in children is of a milder type than that of the adult, and that the prognosis is invariably better. Probably for this reason so very much has been written about its treatment, which, on the whole, adds only to confusion and disappointment. If we, as a body, can find the treatment that will give the best promise of success, and show the truth and falsity of its claims, our work will be of the greatest value. It should not be forgotten that the opportunities that many of us have are greater than those fortune has given to others, and that the work of those who are best versed in treatment is quickly taken up by the less fortunate brethren. For this reason our work will be watched and followed; and, if of value, the reflection 'well done' is sufficient payment.

"For the purpose of merely giving an outline of the work to be pursued, I present the methods used in obtaining the material for this address. In collective investigations the worker is not alone he who undertakes, but also the very many who assist.

"The subject of typhoid fever has been investigated by many associations, and in the work different workers were chosen for certain special sub-divisions. I need but point to the meeting of the New York State Medical Association, their sixteenth annual meeting. A whole session was devoted to the one subject, and each author was given the task for which years of work had given him knowledge. But the subject of treatment, I think, was not sufficiently dwelt upon, and no attempt was made to make it prominent.

"The question of the treatment of typhoid fever in children should resolve itself into the two main questions: First, is there any specific method of treatment; and, second, should the treatment be only symptomatic?

"The question of the specific treatment is the one that will naturally give the most interest. It should be divided into:

1. The so-called antiseptic treatment.

2. The so-called abortive treatment of which the Woodbridge method is a type. (A number of other methods have since then been proposed.)

3. The use of the antipyretics of coal-tar derivation, as antipyrin, acetanilid, thermol, and the like.

"The symptomatic treatment can be studied by: (*a*) the Brandt method or its modification; (*b*) the use of drugs.

"The outline of a task for others to follow is very simple, but may not find favor with those who wish to pursue it. So that it should be left to the committee to choose the method which, in their opinion, is the most suitable, convenient, concise; and furthermore, no restrictions should be placed upon the means employed. The object to be attained is sufficient. That such work as this is receiving the support of those most interested commercially, should not be questioned. That work in this direction, especially with remedies supposed to have specific value, is always of vital interest and always receives the attention it deserves; I ask you all kindly to read the *Pennsylvania Medical Journal* of April, 1900, and note the paper of Dr. James C. Wilson on the treatment of typhoid fever with nuclein solution, presented to the Pennsylvania State Society. Such honest work as this, even if the results are negative, always receives the thanks, not only of the workers in our midst, but of all physicians, and should spur us on to greater efforts.

"We can call a special session and choose those who by experience and training are the best judges. We need not go out from our section. We have in our midst Morse, Griffith, Wilson, Tuley, Cotton, Jacobi, Blech, and so many that a repetition would be reciting our list of members.

"Their labors should be ours, and their results should also be ours, and when the final result will be given, it should be not only as the voice of the committee, but as that of this section.

"If, then, by such work as this, we can claim the saving of but one life, we can prove to the world the reason for our existence, and our labors will not have been in vain."

2. Dr. MARTIN W. BARR, of Elwyn, Pa., read a paper entitled **Etiology of Idiocy and Imbecility**, embodying his studies on the subject for the past fifteen years. The three classes of causes of idiocy and imbecility may be summed up under the headings of heredity, malnutrition and accident. The speaker reviewed the literature of the subject and gave the results of his own investigations. Out of a total number of 3,040 cases, heredity was the etiologic factor in 1,216, or over 40 per cent. Of these, 13 per cent. had a family history of iodicy and 5 per cent of insanity. He said that consanguineous marriages do not result in imbecility or iodicy of the offspring unless there is a neurotic taint in the family of one or both of the parents. Of the cases investigated, only 1 per cent. were due to consanguineous marriages, and hence such marriages are not dangerous unless there is a predisposing neurotic factor. Marriages between persons with a neurotic taint should be prohibited by law. Phthisis was

present in the family in 9 per cent. of the cases, and inebriety in 3 per cent. Malnutrition from all causes was the etiologic factor in 1,092 cases, or 35.20 per cent. Of the latter, 1 per cent. were due to accidents at birth.

3. Dr. A. W. Wilmarth, of Chippewa Falls, Wis., read a paper entitled **The Care of Higher Grades of the Feeble-minded.** The speaker distinguished the lower grades of mental defect—idiocy, and imbecility—from the higher types of feeble-minded and backward children. He defines as imbeciles those in whom the capacity of controlling their actions in such a manner as to enable them to mingle in ordinary society is absent. In pronounced cases of mental defect the diagnosis is easy. It must be remembered that although there may be good capacity for self-care, and even an acquired skill in certain specialized actions, the child still may be feeble-minded. The question as to whether the child is backward or permanently feeble-minded, is not always easy to decide.

At an early stage in mental development a child begins to notice objects, lights, persons, sounds, etc.; if these manifestations of intelligence be long delayed, it may be inferred that that the child is deficient in sight or hearing. As delay in walking indicates backwardness in physical development, or the presence of paralysis, so will delay in the development of speech be a sign of deficient mentality. If speech be wanting at 4 years, one may suspect permanent mental defect; if it does not develop at 6 years, the suspicion becomes a certainty.

At 7 years the child emerges from the inquisitive stage where it asks all sorts of questions, answerable and unanswerable about everything imaginable, and begins to analyze the facts gathered during that stage, putting them together into ideas. It is then that systematic teaching should begin. With feeble-minded children it is not a question of judgment or morals, but the question is whether a child learns as much as a normal child does at the same age. After 15 the diagnosis is comparatively easy. The treatment of feeble-minded children of the higher types should consist, in addition to the necessary medication for whatever physical ills be present, in systematic training of the mind in properly conducted institutions. The author believes that the only way to stimulate the minds of these children is to arouse their imitative tendency, and this can only take place in the presence of the rivalry and companionship of an institution. In the family, no matter how wealthy, this system cannot be maintained, and the discipline is the more lax because the backward child is regarded with special indulgence.

4. Drs. J. MADISON TAYLOR and F. SAVARY PEARCE, of Philadelphia, presented a paper entitled **A Study of the Circulation in the Feeble-minded,** which was read by Dr. Taylor. The authors believe that in many cases of deficient mentality the circulation is at fault, and that these cases can be improved by treating the circulatory disturbances. They report the results of a study of 935 children in the Pennsylvania School for Feeble-minded. The lowest forms of idiots were excluded, and only those cases considered in which there were circulatory disturbances. Of these 72 had definite lesions of the heart or arteries, 40 males and 32 females. The proportion of boys to girls in the institution is 3 to 2, because girls are more often kept at home, although feeble-minded, as they can do housework, etc. In most cases the vaso-motor system was largely at fault. In speaking of the effects of treatment, the authors state that the most successful cases are those in which the circulatory trouble is treated early, and emphasize the importance of the early diagnosis of the cardiac lesion. In the milder forms of feeble-mindedness the most favorable results may be expected, while in the imbeciles but very little can be done. The theory upon which the authors base their treatment is the well-known fact that the circulation has a great deal to do with the nutrition of the nervous system, and that in the presence of deficient circulation the toxins which lie at the root of changes in the nerve cells have better opportunities for activity.

5. Dr. A. COTTON, of Chicago, Ill., read a paper entitled **Infantile Cerebral Palsies.** The speaker classes under the name cerebral palsies all conditions of impaired function due to cerebral disturbances that are the result of cerebral lesions. This would include the palsies described by Little (spastic cere-

bral diplegia, congenital muscular rigidity), Sachs, and others, He reported 25 cases, 18 males and 7 females. In the majority of cases the symptoms developed before the end of the first year. In 17 cases the onset was at birth. Of 11 diplegic cases 7 were idiots; of 8 hemiplegic cases 2 were idiots. Athetoid movements were present in only 2 cases, both diplegics. In one diplegic there was no mental defect. Over one-half of the cases were microcephalic. Dysphasia was more or less marked in the majority of the cases, and seems to be the rule in cerebral palsies. The speaker exhibited photographs of 18 cases.

DISCUSSION ON FEEBLE-MINDED CHILDREN.

Dr. W. M. **Leszynsky**, of New York, said that he was surprised to hear Dr. Wilmarth state that better individual training could be had for imbeciles in institutions. He believes that much better results may be obtained at home in families who are in good circumstances, or in very small institutions, where the number of children does not exceed four or five. The management of the idiot and imbecile rests with pedagogic training. As to the effect of circulatory disturbances upon the mind, he thinks Dr. Taylor did not prove his point, for these disturbances may be the direct result of the cerebral affection. The physician should examine every child that is brought to him with epilepsy for evidences of cerebral palsy. Of course, where hemiplegia or contractures are present the diagnosis is clear, but where these are absent, one cannot tell whether the epilepsy is idiopathic or due to cerebral lesions without careful examination. Epileptic attacks are often the first symptom that brings the child to the physician.

Dr. J. P. **Crozer Griffith**, of Philadelphia, said that he had noticed particularly the rarity of posthemiplegic tremors in infantile cerebral palsies. The spastic and choreiform types are more frequent.

Dr. J. **Madison Taylor**, of Philadelphia, in reply to Dr. Leszynsky's criticism of Dr. Wilmarth's statement concerning the comparative value of institutions in the treatment of feeble-minded children, said that he also formerly believed that treatment at home, when it was possible under competent management, was better for these children, but he had changed his opinion since studying the effect of life in institutions upon the feeble-minded. Such cases do better with the systematized instruction and with the stimulus of association with children of their own grade of mentality.

Dr. Cotton, in closing, said that cases in which improvement takes place in imbeciles are so rare that he is glad that some attempts have been made to systematize instruction for these unfortunates. He agrees with Dr. Griffith that post-hemiplegic tremors are very rare in cerebral palsies of children. The symptoms of these cases are not necessarily only cerebral, but cerebral and spinal lesions may coincide. He related one postnatal case in which symptoms began at 6 months of age. The patient is now 24 years old, and is self-supporting.

" Antitoxin Results and Diphtheria Definitions."—Dr. Adolph Rupp, in a letter dated May 18, 1900, complains that he was "misquoted" in an abstract of his paper on "Diphtheria," which appeared in the May 1st issue of Pediatrics, pages 382 and 383, the original having been published in the *New York Medical Journal*, January 27, 1900.

The following is the passage in the abstract to which the doctor objects: "At all events, the severity and mortality of diphtheria vary in different epidemics between 1 and 95 per cent., and, as a rule, it is a surprisingly mild disease, and not the dreaded scourge that the antitoxin enthusiasts would make us believe." The passage which bears on the point in question in Dr. Rupp's paper is as follows: "Antitoxin advocates, like Dr. Biggs, Louis Fischer, and others, are fond of repeating over and over again that 'diphtheria is one of the most dreaded diseases in modern times.' Such a statement fails by being inexact, and in so far untrue. Diphtheria has been so mild as to surprise the doctors—2 to 5 per cent. mortality rates; and at other times and places it has killed 95 per cent. of its victims." Then follows a series of statistics from various sources, which shows how epidemics vary in the mortality rate, and in the very character of the disease. Our impression of these figures was that they showed how frequently the disease is really mild.

We are very sorry if we have misunderstood Dr. Rupp, but the words of the abstract, which are quoted here, represent the impression we received from a conscientious study of the article in question, and it was far from our intention to misquote the doctor.

FOREIGN PEDIATRIC JOURNALS.

Abstracts of all Original Articles Appearing in Foreign Journals Devoted to Pediatrics

JAHRBUCH FUER KINDERHEILKUNDE, MARCH 1900.

1. **The Spleen in Rickets.**—By P. N. SASUCHIN (St. Petersburg). The writer studies a subject that has received comparatively little attention heretofore,—the microscopic changes in the spleen in rickets. He examined the spleen in sixteen children, from 2½ months to 3½ years of age, in whom the changes in the bones were very well marked. He found in general that the spleen is almost always enlarged in rachitis, with the exception of cases that are accompanied by pronounced general atrophy, in which the spleen is of normal size or slightly diminished. Another peculiarity of the rachitic spleen is the more or less marked thickening of its capsule, and the increase in the consistency of the organ. A third feature of these spleens is the pronounced anemia of the organ, and the diminution in the number of the Malpighian bodies.

The changes in the spleen are, in general, proportionate to the degree of osseous changes that they accompany. In summing up the microscopic changes the writer says that the spleen in rickets is the seat of a chronic productive inflammntion, accompanied by a proliferation of epitheloid cells, and by a degeneration of the latter in the centers of the follicles. In some cases there was in addition to this an infiltration of the pulp of the spleen by masses of red blood cells that were partly disintegrated and converted into islands of pigment. He cannot definitely state whether these changes are due to the rachitic process alone, or whether they are also due to complicating pathologic conditions. He found similar changes in the spleens of children who died of diphtheria, bronchopneumonia, and enteritis, only the splenitis was not so pronounced as in the rickety subjects. His conclusions are:

1.—That rachitis is accompanied by definite, characteristic changes in the spleen. While these changes may be in part due to complications, it is strange that they were so uniform, no matter what the nature or the severity of the complications, and that they correspond in intensity to that of the changes in the bones.

In the control examinations in children who had died of pneumonia, etc., without having had rickets, the changes in the spleen were not always present, and always less well marked than in the rachitic subjects.

2.—Rachitic changes in the spleen appear at an early age in nurslings (2 months) and their traces remain a long time.

3.—The pronounced cases are characterized by hypertrophy of the connective tissue stroma, narrowing of the lumen of the arteries of the spleen, and atrophy of the Malpighian bodies. Similar conditions in the spleen are found in syphilis and tuberculosis, but these diseases were carefully excluded in all the cases examined.

4.—The hematopoietic function of the spleen is evidently weakened by these changes.

5.—The examination of the spleen in the initial stage of rachitis is very much to be desired, as it may give a clue to the etiology of this disease.

2 **The Use of Ichthyol in Scarlet Fever.**—By A. SEIBERT (New York). Professor Seibert describes the therapeutic application of ichthyol in scarlatina in the form of inunctions over the entire surface of the body and of irrigations of the pharynx. He has used a 5 per cent. to 10 per cent. ointment of ichthyol in lanolin in scarlatina since 1884. The ointment is applied once or twice daily, in such a manner that the whole body is covered and the ichthyol is rubbed into the skin until hardly any ointment remains on the surface. The skin of the patient assumes a brownish hue after the inunction, which is made with the tips of the fingers. The object of the inunctions is to rub the ointment into the skin in such a manner as to bring the ichthyol into direct contact with the capillaries and lymph vessels in which the bacteria are lodged. The effect of these inunctions are as follows:

The swelling of the skin is reduced after the first inunction. The pruritus, which is excited by the ichthyol, disappears quickly. The occurrence of ulcerations and phlegmonous and erysipelatous infiltrations in the skin is prevented. The temperature is lowered in all uncomplicated cases after a few hours to the extent of from 1° to 3° F. The sleeplessness and restlessness improve.

He has treated fifty-six children in this manner, and this group did not include very malignant nor very mild cases. The inunctions also serve to lessen the liability of the other children in the family to contagion, and the disease was limited to one child in each family where the inunctions were employed.

The intensity and duration of the desquamation were considerably lessened by the inunctions, which were continued throughout this stage. There were never any toxic symptoms from the use of the ointment.

In the streptococcus infection of the pharynx and tonsils which accompanies scarlatina the writer has also used ichthyol in the form of irrigations. The advantages of this drug over bichlorid of mercury and other antiseptics used in the throat are its non-toxic character (even in large doses in young children) and its bacterial value, which is shown by the action of dilute solutions on pyogenous and erysipelatous streptococci. The method of employing these irrigations was as follows: In order to secure a thorough mechanical cleansing, as well as a chemical disinfection, ¼ liter of a 5 per cent. solution of ichthyol was used in an irrigator that was suspended about three feet above the patient. The 5 per cent. solution was found to be sufficiently strong, and yet could be swallowed in considerable quantity by infants with impunity, The warm liquid was injected into one nostril and then into the other, and allowed to escape through the mouth. All the patients received in addition the following mixture by mouth and inunctions of 5 per cent. ichthyol ointment all over the body every six hours:

℞

Acidi Carbolici	gtt. 10.0
Potassii Iodidi	1,0
Tincturæ Iodi	2,0
Aquæ distillatæ, ad	120,0

M.S., a teaspoonful every hour.

The irrigations of the nose and throat were repeated every six hours. The writer has used these irrigations for the past 4½ years with good results. In all cases the children, and often the parents, objected to this method of treatment, but the marked improvement that followed the first few irrigations usually satisfied the parents. It is always advisable to demonstrate the method of irrigation once, even if there is a trained nurse in attendance.

3. **Concerning Ulcerated Corners of the Mouth in Childhood.**—By A. EPSTEIN, (Prague). Both corners of the mouth are affected as a rule. In mild cases there is only a slight desquamation of the epidermis at the corners of the lips, which becomes apparent when the mouth is opened. In more advanced cases there are whitish spots occupying the comissures, the epidermis is thickened, or projects above the level of the surrounding skin, and is folded in the shape of a fan. Sometimes the epidermis scales off, and the underlying cutis appears shiny, or covered with a grayish film, or with a brownish crust. In cases of long standing, the skin surrounding the commissure is more markedly thickened, and its surface appears uneven and warty. When the mouth is widely opened, a transverse fissure is usually seen, or several small fissures radiating from the corner of the mouth may be present. These fissures bleed easily when put on the stretch. The ulceration may be broader, with a more extensive loss of substance.

The disease usually lasts two weeks, but it may become chronic and last much longer. The fissures may heal and reopen in a few months. Ultimately they heal permanently, without scars, but a whitish line in the corner of the mouth indicates the site of the disease.

They occur most frequently during the cold season of the year, and rarely affect children under the age of two years. Poverty, uncleanliness, anemia, and chronic intestinal affections seem to be the prime factors. Rhinitis and impetiginous eruptions on the skin are frequent accompaniments. It is also possible that a peculiar anatomic formation of the commissure of the lip may predispose to the affection. The writer mentions that in some persons there is a small raised fold of mucous membrane at the corner of the mouth, which covers a minute recess or niche, and which may harbor particles of food, etc. The disease is popularly supposed to be contagious, and Lemaistre has described an anaerobic streptococcus as the specific germ of these ulcerations. Others believe the disease to be due to one of the numerous germs that occur in the mouth. It must be differentiated from eczema of the lips, from herpes labialis, and from syphilitic mucous patches. The latter are sometimes difficult to distinguish from simple ulcerations or erosions of the commissure. In speaking about possible complications, the writer says he has seen five cases of diphtheria of the corners of the mouth, which followed diphtheria of the pharynx. The best treatment for the ulcerations is cleanliness, and the application of small bits of 5 per cent. salicylic acid plaster mull. Another method which gives good results is dusting with dermatol, xeroform or orthoform.

4. **Concerning Chronic Relapsing Exudative Anginae in Childhood.**—By Rudolph Fischl. Under this title the writer discusses the follicular and exudative anginæ that affect children over two years of age, and recur at variable intervals until they disappear at the time of puberty. The etiology of these recurrent attacks of tonsillar inflammation is not quite clear, but there is no doubt that heredity plays an important role in their causation, inasmuch as the disease occurs so frequently in members of the same family, and in children of parents who were themselves similarly afflicted when young. The gouty and rheumatic diatheses also may be said to rank as predisposing causes of recurring tonsillitis, while many factors in the child's environment, such as the character of the dwelling, exposure to cold, and uncleanly habits, especially the hygiene of the mouth, are of minor importance. The author noted, however, that children who live in houses that are situated in the vicinity of stables are more frequently attacked, and he attributes this not only to the large number of bacteria that are carried by the air from the manure that accumulates in these places, but also to the quantity of flies that infest such localities. As far as the bacteriologic aspect of the disease is concerned, the author states that staphylococcci and pneumococci are found to be the exciting agents in a large percentage of these cases, the rest being caused by streptococci. A peculiarity of this affection is that the patients do not acquire that comparative immunity which we are accustomed to find in other infectious diseases after repeated attacks. On the contrary, the attacks succeed one another, in varying degrees of intensity, some of the most severe cases occurring in the older children. In the author's experience, which embraces a period of fifteen years at Prague, one-half of all the cases of recurrent tonsillitis had no trace of tonsillar hypertrophy, and he has seen a large number of children with amygdalar hypertrophy, who never suffered with tonsillitis. In some children in whom the hypertrophic tonsils were removed, the inflammatory process recurred on the scar that followed upon tonsillotomy. He cannot agree with the notion that adenoids frequently accompany tonsillitis, or that they develop as the recurrent tonsillitis progresses.

In speaking of the clinical forms, the writer mentions the fact that the infectious process sometimes will suddenly recrudesce, after an apparent decline which was signalized by a fall of the temperature. It is important to bear in mind the possibility of such an occurrence, and to be cautious in making the prognosis. In some cases the follicular plugs are not expelled, although the tonsillar inflammation disappears, and the temperature may continue to be high for six or seven days. The throat must be examined daily during the attack, and in the children who habitually suffer from this recurrent tonsillitis, every new attack of fever must be interpreted as a recurrence, and the throat must therefore be looked after.

There is no doubt as to the infectious nature of this affection, but the author does not believe that the disease can be communicated by a third person, except under unusual circumstances. As a rule the course is uncomplicated, and terminates favorably, but if the attacks are frequently repeated, the nutrition of the child suffers very markedly, and severe anemia results.

The nervous system is also affected in many cases; a peculiar irritability follows after each attack, and in one case the writer saw every attack preceded by convulsions and by profound coma.

As regards treatment, he says that as a rule but little can be done to prevent the recurrence of the attacks, while the treatment of the single seizure is not so important, inasmuch as the tonsillar inflammation tends to get well of itself. Stimulating and climatic treatment, together with proper hygiene are the best means to combat the predisposition to recurrent attacks of tonsillitis.

5. Concerning the Excretion of Uric Acid.—By F. GOEPPERT. After a series of experiments relating to the excretion of uric acid in healthy children and adults, the writer arrives at the following conclusions: Every article of diet is represented by a factor $\frac{\text{Total N.}}{\text{Ur. Ac. N.}}$. This factor does not differ very much whether the diet be animal or vegetable, although every article of diet, vegetable or animal, has its own factor; in persons who are put on a mixed diet the elimination of nitrogen is in proportion to the amount of uric acid excreted. Some substances, as calf's thymus and other tissues rich in nuclei, nuclein, extract of thymus free from nuclein, possibly also nucleic acid and meat extract, have the property of forming more uric acid than corresponds to the amount of nitrogen that they contain.

On the other hand, eggs, milk, and a variety of other albuminous substances give less uric acid than a mixed diet with the equivalent amount of nitrogen.

The articles of diet that do not contain any nitrogen, such as fats, carbohydrates, alcohol and water, only influence the formation of uric acid in so far as they have to do with nitrogenous metabolism, and therefore do not alter the fator: $\frac{\text{Total N.}}{\text{Ur. Ac. N.}}$

Moderate increase or diminution in the amount of nitrogen does not affect this factor to any extent. The author has not yet fully determined the effect of very marked diminution or increase in the amount of nitrogen eliminated upon the excretion of uric acid.

6. Some New Facts Concerning the Pathology of Congenital Syphilis.—By Dr. HECKER. The principal difficulty in studying the histologic features of fetal structures is that we cannot be sure what is pathologic, and what is perfectly normal at the stage of development with which we are dealing.

The writer considers the pathology of the liver, kidneys, and umbilical cord in congenital syphilis. He dissected 113 cadavers, of which 25 were undoubtedly syphilitic.

A microscopic examination was made in 10 fetal cadavers that were syphilitic beyond doubt, in 9 children who died of hereditary syphilis before they reached the age of three months, and in 12 perfectly normal stillborn children, some of which were born at term, and others prematurely.

He found that, contrary to the notion accepted heretofore, the kidneys exhibit constant pathologic changes in congenital syphilis. The writer also found that there was a difference between the syphilitic kidney of fetal life and that of nurslings. In the former the changes noted are an infiltration of small cells in the smallest cortical vessels, or sometimes in the larger vessels of the medullary portion, often a hypertrophy of the interstitial connective tissue, and periarterial changes around the small arteries of the cortex. In children born at term this vascular and perivascular infiltration disappears more and more, and degenerative changes in the epithelium become more prominent. In nurslings there is atrophy, degeneration, and disintegration of the cells, and secondary dilatation of the tubules which often contain granular or hyalin casts. In the Malpighian bodies of these kidneys he also found inflammatory and degenerative changes.

The difference between the kidneys of the fetus and of the nursling can be seen from the fact that in the former there is an increase in weight on account of the hypertrophy that takes place in the kidneys, while the atrophic condition of these organs is accompanied by a decrease in weight in nurslings. The occurence of renal lesions in congenital syphilis may be demonstrated clinically, the urine in these cases usually showing the presence of albumin and casts. Concerning the theory that the so-called neogenic zone of the fetal liver is the place where the greatest amount of growth takes place, and that its presence is therefore a proof of Hochsinger's hypothesis, that the syphilitic virus inhibits the development of the organ and causes the kidney to retain some of its fetal characteristics, the writer says that he believes that the neogenic zone has no pathologic significance whatever, as that it may be present in perfectly normal kidneys.

In concluding his discussion of the kidney, he says that while the interstitial changes are typically syphilitic, the parenchymatous lesions cannot be used as diagnostic signs of lues.

The liver is not so easily affected as the kidney. Certain aggregations of cells that are in reality normal phenomena of development may be mistaken for syphilitic cell masses. The writer found that such cells are found in normal fetal livers and that they may be either young proliferating epithelium or nucleated blood cells in the process of development. Hence the liver is not a fully developed organ at the time of birth and plays an important rôle as a blood-forming center, both during fetal life and at birth.

The author also suggests that the umbilical cord be examined microscopically in infants where syphilis is suspected. The changes noted in such cords are a marked endocarditis, periarteritis, or periphlebitis, or a small cell infiltration in the walls of the vessels or in their immediate vicinity. These are not characteristic of syphilis, and may be present in normal infants.

Concerning the Treatment of Eczema in Childhood.—By J. H. RILLE. The writer describes in detail the methods of treatment of eczema in the young. He emphasizes the fast that while the treatment of this disease in children does not differ from that employed in adults, it must be remembered that in children all remedies must be milder on account of the sensitiveness of the skin. The principle of *non nocere* must also never be forgotten when dealing with such cases.

DER KINDERARZT, APRIL, 1900.

1. **Concerning a New Epidemic Disease of Chilhood in Coblentz and Vicinity.**—By A. TRIPKE. During the months of January and February the writer observer a number of cases of an epidemic disease among the children of Coblentz which has never been described until the appearance of the articles of Sticker (*Zeitschr. f. pract. Aertze*, Jahrg. 8, No. 11, p. 353) and Schmidt (*Wiener. klin. Wochenschr.*, No. 48, 1899), who reported identical cases in Graz and Giessen, respectively.

The clinical features of the disease as observed in Coblentz were as follows: The onset was usually sudden, in a few cases preceded by a mild diarrhea. The child would wake at night, calling for water, and the parents would note that the skin was intensely hot. The child would be restless all night. On examination on the following morning the writer found an eruption covering both cheeks, scarlet in color, burning to the touch, sharply outlined against the surrounding skin, evenly spread, except some paler spots in various places. On the chest he found a rose colored eruption consisting of spots which varied in size from that of a pinhead to that of a lentil. Some of these spots were isolated, but the majority were connected with one another by pale rose-colored elongations, which gave the chest a map-like appearance. It was remarkable that the eruption upon the chest never was evenly spread like that on the cheeks. The rest of the skin was not affected. There was as a rule no coryza; the mucous membrane of the mouth and pharynx was normal; the lymphatic glands of the neck not affected; the examination of the lungs and heart was negative; the spleen not enlarged; the abdomen soft and not swollen; the temperature by rectum was 40 to 41° C., and the pulse 160 to 180.

In the course of the next few days the eruptions spread over the trunk, the back, and the extensor surfaces of the extremities; while the abdomen and upper extremities were regularly affected, the back and the lower limbs often remained free from the eruption. The forehead and temples were involved only in two cases where the eruption and the disease in general were more severe and lasted longer than usual. The flexor surfaces were affected in a number of case, but there the eruption consisted of very fine red lines which were hardly visible.

In all cases the neck, the scalp, the buttocks, the soles, and the palms remained free from the eruption. The exanthem upon the trunk, the back, the extremities, and the forehead did not appear as a diffuse redness but as a delicate network which covered these parts; here and there small red spots were seen at the intersections and the skin between the red meshes assumed a bluish hue. During the two or three days which were occupied by the development of the eruption there was complete anorexia and the temperature continued between 40 and 41 C. Then the eruption began to fade, assuming a dirty, gray color, and disappeared completely in two or three days, during which the temperature fell to normal. In a few cases, however, the temperature continued high, although the eruption had disappeared, while in others the temperature fell by crisis with a sudden disappearance of the whole eruption.

There was no desquamation, no pigmentation of the skin, and no complications of any kind in any of the cases, but even very healthy children lost a great deal of flesh and looked profoundly chlorotic after the attack. It took several weeks in some cases until they were able to walk about.

The only difference between the cases reported in the other two epidemics and those upon which the present paper is based. is that the latter were marked by pronounced constitutional disturbances, while the former ran their course without affecting the general health of the patients. The writer believes, however, that his cases were examples of the same affection as those reported by Sticker and Schmidt, and that the latter only happened to be milder epidemics. There is absolutely no doubt of the infectious nature of this disease, but it is far less contagious than measles or scarlet fever.

The author accepts the designation, "erythema infectiosum," suggested by Sticker and Schmidt, but adds that the two types may be distinguished as the febrile and the afebrile. He suggests the name "Kinderrotlauf" as a popular synonym for this affection.

There can be no difficulty in differentiating epidemic erythema from measles and scarlatina. A careful examination of the eruption will exclude the possibility of mistaking this trouble for roetheln. The absence of any involvment of the gastrointestinal and respiratory tracts will facilitate a differentiation of the disease from influenza.

2. **Concerning the Treatment of the Initial Stage of Rickets.**—By Dr. HILLE. There can be no such thing as prophylaxis in rickets as long as we are in the dark concerning the etiology of this affection. It is important to notice the development of rickets as early as possible. Unfortunately rickets but very rarely is preceded by prodromal symptoms, if we except perhaps the early appearance of hyperidrosis in the occipital region. The majority of writers maintain that rickets does not develop in the very first months; the writer's experience shows the opposite, and he but rarely found that the disease begins after the sixth month.

The treatment should include the observance of proper hygienic measures, above all—a rational bed. A horse-hair mattress and a pillow filled with the same material is all that the child requires, and feather beds must be prohibited. The infants must never be allowed to sleep fully dressed, as is often done. These measures, together with frictions with dilute alcohol, if needed, will help to combat the tendency to profuse perspiration, which is such a fruitful source of the catarrhs of both the respiratory and the gastrointestinal organs in rachitic children. Phosphorus, preferably in combination with cod liver oil (0.01: 100,0), is especially valuable in the presense of laryngospasm or general convulsions. Another very effective remedy are salt baths, which are best given in 2 to 10 per cent. strength at bed-time. They are well borne, even by the youngest infants, and the bath at 27° C. (80.6° F.) continued for ten minutes will generally secure a quiet, refreshing sleep during the whole night. The author believes that by timely intervention one can prevent the development of the severe types of rickets.

DIETSKAYA MEDITSINA, FEBRUARY, 1900.

1. **The Thymus Gland, Laryngismus Stridulus, Spasmns Glottidis, Asthma Rachiticum, Asthma Thymicum.**—By Dr. E. J. TINDES. Cases of sudden death in infants after an attack of dyspnea, have been quite frequently reported. The first description of an affection characterized by periodically recurring attacks of dyspnea we owe to Plater, who wrote an article on the subject in 1712.

Millar called the trouble asthma Millari in 1790, and Good gave it the name that is most current at the present day—laryngismus stridulus. In those days it was thought that the enlargement of the thymus gland was responsible for the symptom-complex, and hence the synonym "asthma thymicum" arose.

Since then, thanks to the work of numerous observers, it became known that the thymus occupies an important but not an exclusive position among the causes of this malady. The writer reports the case of a boy, aged 4 months, who showed the typical appearance of rickets, and who suffered from impetiginous eczema. The child died suddenly while at the hospital, without crying out, and without anything that would attract the attention of the nurse.

On autopsy it was found that the thymus was enlarged, that gland weighing over 20.01. The author then gives an analysis of similar cases reported in literature. He shows that children may die suddenly after an attack of dyspnea without having previously suffered from any serious disease. In some cases, however, the patients had been subject to periodic attacks of dyspnea, and died in asphyxia during the last of these seizures. These attacks are frequently observed in members of the same family, and often occur during the period of dentition, and some authors believe that this is also due to the fact that the thymus becomes hyperemic during that period. Other causes given by various authors as etiologic factors in laryngospasm are rickets, the lymphatic diathesis, disease of the thymus, exclusively or in conjunction with other causes, and tetany or eclampsia.

Thus the disease has a large number of names, each author giving it the appellation that corresponds to his conception of its pathogenesis. The fact that an attack of laryngospasm may be fatal makes the prognosis doubtful in any event. The only rational treatment is the prevention of the occurrence of the attacks by combating the cause, be it rachitis, intestinal intoxication, or lymphatic diathesis.

When we have to deal with laryngospasm of the thymic variety, it would perhaps be well to experiment with thyroid or thymus extract as a mode of treatment.

In speaking of the probable nature of the present case the author believes that the name asthma thymicum can be applied to this instance, inasmuch as the thymus was found so markedly enlarged.

2. **Concerning the Question of Rickets in the Tula District.**—By I. K. STJELBITSKY. This article gives a series of statistics concerning the frequency of rickets in that part of Russia. The author bases his figures upon the examination of 2,000 children in that locality; of these 1,000 were dispensary patients, 874 children of peasants in the districts, and 126 children seen in private practice. Among the peasants the frequency of rickets was 77.5 per cent., among the dispensary cases 83.8 per cent., and among the private patients only 60.3 per cent. The ages of these children ranged from 3 months to 2 years. In a detailed analysis of the cases we note that the author did not find that damp dwellings influence the occurrence of rickets to any appreciable extent. The author further shows that there is no close relation between syphilis and rickets, as some French observers would have us believe. He found also that the material conditions of life of the families investigated did not affect the percentage of rickets. Gastrointestinal derangements, without doubt, play the principal role in the causation of the disease. In conclusion the writer considers in detail the frequency of each symptom, and of each deformity in the 2,000 cases recorded.

3. **Gonorrheal Rheumatism in Children.**—By A. I. TULINOFF. The case reported here was the second that was observed in the hospital of St. Olga, in Moscow, since its foundation thirteen years ago. The patient was a girl aged 2½ years. On admission, she complained of swellings in the wrist and left knee, and of symptoms of vulvovaginitis. The child's father had been suffering from a severe urethritis for two months before her admission. Her mother had for the past four weeks a mucopurulent discharge from the vagina, and difficulty in passing the urine. She slept in the same bed with her mother. The vulvovaginitis appeared in the patient two weeks before admission, and the rheumatism appeared about ten days after the infection, The symptoms were fever, pain and swelling of the affected joints. Gonococci were found in the vaginal secretion, The temperature was of the remittent type, never exceeding 39.5° C. The other joints were not involved; the heart sounds seemed normal. The pain and swelling of the knee lasted two weeks, the rheumatic symptoms at the wrist four weeks. While statistics on the subject indicate that such cases are extremely rare, it is possible that the rheumatic manifestations are overlooked, especially in young children, or that they are attributed to other causes than gonorrhea. The writer gives a detailed statement of the literature of the subject.

PEDIATRICS

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VOL. X. JULY 15th, 1900. No. 2

ORIGINAL ARTICLES

THE DIAGNOSIS AND TREATMENT OF DIPHTHERIA.*

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BELIEVING that the time is now at hand when a careful investigation into the merits of treatment for diphtheria may be undertaken with some likelihood of reaching conclusions without prejudice, I have accepted the invitation to open this discussion to-night, with the hope that in the various opinions expressed we might definitely dissipate much of the darkness which surrounds the diagnosis and treatment of diphtheria.

Though this disease has been under observation for so many years, and its intimate nature investigated by enlightened minds with unrivaled zeal, it is not a little humiliating to contemplate at this late day that such a scourge to the human race is yet often victorious over the chances and uncertainties of treatment, which are neither precise in their indications, direct in their action, nor positive in their results. The intricate and mysterious phenomena only recur to mock the meagerness of our knowledge and resources.

The history of diphtheria is quite as full of marvels as that of mesmerism or malaria. Its history has furnished material for volumes made up by industrious collaborators from various sources and with everlasting repetition. The time has long since passed when rehearsal of the history can offer anything more novel or instructive than that which has already been afforded us.

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* Read before the Medical Association of the Greater City of New York, April 9, 1900.

In the astonishing tenacity with which the contamination of diphtheria adheres to certain substances and remains in certain localities, this poison resembles the class of eruptive fevers, but it does not appear to possess that other property of these contagions that destroys susceptibility of the organism upon which they have acted, and thus protects it against recurrence.

Reviewing the history of epidemics of diphtheria, we are forcibly impressed by the uniformity of the descriptions of the character of the disease and the appearance of it in communities in varied degrees of virulence. The accounts of some authorities respecting particular epidemics which they have met, might lead us to suppose that each had a different disease to treat, except that their definitions of the characteristic morbid product visible in the fauces agree so closely.

Why in some instances the malady should be so tractable and in others resist well-directed and persistent treatment, are questions which can only be explained by circumstances affecting either the intensity of the infection, the character of the individual constitution attacked, or both conditions combined.

From a pathologic point of view, we cannot fail to recognize three distinct conditions of membranous exudation about the air passages:

One, presenting itself in greyish aphthous patches, occurring most commonly in states of debility and deranged digestion, the true nature of which, together with its microscopic fungi, was first defined by Gruby, in 1843, and to which he gave the name of muguet.

Another is the local non-contagious inflammatory affection about the glottis, accompanied with stridulous breathing, the pathology and nature of which was first definitely described by Home, of Edinburgh, in 1865, under the term of croup, and subsequently by Cheyne and Sir Charles Bell as cynanche trachealis.

The third is the specific, contagious, infectious, asthenic general disease accompanied with a peculiar cacoplastic lymph-exudation, spreading a thick, tough and stratified film over tonsils, palate, uvula, larynx, pharynx and trachea, with tendency to invade the bronchial tubes and nasal passages. A disease so malignant in type that there are instances upon record in which it has run its course from health to death in less than a single day, and sometimes killing even before the diphtheritic pellicle has had time to form,—a disease accompanied with great prostration, commonly with albuminuria, sudden and dangerous changes of temperature, cutaneous eruptions, enlarged glands, and even paralytic complications.

The last alone is diphtheria, and the nature and efficacy of remedies vaunted for its successful treatment must be tested in the presence of these characteristic symptoms to establish faith in their efficacy.

Though Bretonneau in the early part of the present century defined with great precision and clearness the pathology and nature of the disease, to which he first gave the name of diphtheria, there has never ceased to be more or less cavil and confusion over its diagnosis, leading not only to errors in practice, but to false statistics, resulting in a large amount of valueless conclusions regarding the death-rate incident to the malignant malady.

There is just as wide, distinct and palpable a difference between diphtheria, even from its very inception, and other affections of the respiratory passages attended with membranous deposit, as between typhus and typhoid fever.

It is important that the diagnosis of all diseases attended with pellicular exudation should be promptly decided and announced, since diphtheria is certainly contagious, while other forms of sore throat are not liable to be propagated through the air, or by contact with other members of the household.

The bacterial evidences upon which many now solely rely for conclusive diagnosis must have no significance if unassociated with the clinical picture described, for what are supposed to be the characteristic germs have been detected in conditions of apparently perfect health.

An interesting illustration of this occurred in the case of a little girl about twelve years of age, whose nasal and tonsillar surfaces and nasopharynx were richly coated with leathery pseudomembrane. There was headache, rachalgia, general prostration, painful throat, pulse and temperature indicating a high grade of fever; in fact, a perfect type of diphtheria. A culture was obtained with great care, and submitted for examination without yielding a characteristic bacteriologic result. The case was declared non-diphtheritic. I, however, disregarded the opinion, and treated the case as one of genuine diphtheria. At the expiration of ten days, the mucous membranes had entirely cleared, and the general symptoms had abated, the patient appearing to have convalesced in every respect. A culture obtained at this juncture was again submitted for examination, and declared to yield unmistakable Klebs-Loeffler bacilli, and pronounced a case of true diphtheria.

If the presence of this bacillus is essential for a correct diagnosis, the child was certainly in a condition less favorable for any treatment at the termination of her illness than at the commencement, yet she readily recovered without the use of specific serum, though if it had been used another success might have been recorded in favor of the serum, provided no harm resulted.

It has been the habit, I fear, of too many physicians to group all diseases about the throat attended with patchy exudation under the one generic classification of diphtheria, and so lay claim to great success in its treatment, when by far the greater proportion of these cases are of a mild and tractable nature. Therefore it can be readily understood how the reputation of any boasted specific for the control of the graver disease may be imposed upon the too credulous.

It happens not infrequently that during the progress of cases of scarlatina and of croup, diphtheria intrudes in hideous complication. Does any rational and experienced physician venture to assert that the morbid product of a fostering enzyme prepared solely to control one of these conditions, can possibly prove effectual in overcoming the mixed malady that is thus presented?

The most serious cases we have to deal with are all mixed infections, and many authorities assume that such cases, without regard to treatment, will surely tend to increase the rate of mortality, though some cases do yield with promptness to ordinary treatment.

Formerly attending physicians without doubt have certified that scarlet fever patients have died from diphtheritic croup;

but later, in their eagerness to exalt the value of antitoxin, to which they have attached faith, they attribute their fatal cases of diphtheria to scarlatina, and thus throw over a preponderance of recoveries to the former.

Those who advocate the serum treatment must have an obscure appreciation of the pathogenesis of the disease, which is often so complex in its nature that no remedy could be relied upon alone to meet the varied requirements in each case.

Though bacteriology is rapidly advancing to the dignity of a science, and while certain diseases have been thought long ago to take their origin from specific organisms no direct pathognomic import was attributed to these germs until Pasteur and Koch gave them significance. We cannot yet be said, however, to have interpreted fully the results achieved up to the present time. Bacteriology is yet but in its infancy; the many marvelous revelations in the line of its researches are barely comprehended to-day, and years hence may have a different interpretation attached to them.

The dependence upon either the microscope or what is called the "culture test" for the diagnosis of diphtheria has proved too often a vain reliance. It seems absurd to an active practitioner to delegate to the microscope and laboratory alone the diagnosis and treatment of any disease. I have too much respect for clinical experience to conceive it possible for the mere searcher after germs and incubator of theories without practical knowledge to decide upon the great question of remedies. As well expect a compounder of explosives to command an assault!

Active practitioners at the bedside are alone responsible for the safe conduct of our patients to health. Nevertheless, we owe a certain debt of gratitude to the exploring lens of the microscope no less than to the laboratory of the chemist; but we must protest against either or both of these presuming to dictate without clinical knowledge the management of our cases.

These resorts, which may be regarded as complementary only to diagnosis, yet so confidently relied upon by our transatlantic brethren, are either fallacious, which I rather suspect, or we must recognize the alternative, that we have on this side of the ocean no competent authority to help solve the doubts of busy practitioners respecting the malignant or benign character of cases they may be called upon to treat.

The indications in the treatment of diphtheria are naturally those which suggest themselves in the conduct of every other condition of toxemia. All efforts should be directed first to sustain, then to aid, with such means as we can command, the efforts of nature in her benign struggle to eliminate the noxious principle under which the body is suffering.

Nature is often justly relied upon to aid and rectify herself, and the *vis medicatrix naturæ* so dwelt upon by Sir John Forbes cannot be too highly respected. It was the *nimium diligentiæ* which called down upon our profession the scathing sarcasm of d'Alembert. "Nature," says the philosopher, "is fighting with disease." "A blind man armed with a club"; (that is, the physician) "is called upon to settle the difficulty; he first tries to make peace; when he cannot accomplish this, he lifts his club and strikes at random; if he hits the disease, he kills the disease; but if he strikes nature, he destroys nature!"

Above all, let it be our duty to avoid doubtful efforts to do good, lest we inflict harm. Let us beware of superadding another toxic influence to one already existing, and so avoid inducing complications of a serious character.

If, however, the advocates of this new practice seriously propose to overwhelm an existing disease, the cause of which they do not quite understand, with a potent poison, the nature and composition of which they think they understand, and believe they can better cope with the latter than the former, then the condition is reduced to the farcical situation arrived at by the noted frontier doctor, who always endeavored to throw cases which he could not diagnose into convulsions, as he was most skilled in handling fits.

If we bear in mind the now generally admitted fact that diphtheria is a constitutional disease, whether the poison enters the system through wounded integument or through the respiratory organs, and that therefore the local phenomena are only one of its modes of manifesting itself, precisely as the exanthemata declare themselves upon the surface of the skin, the rational treatment of each case must necessarily be regulated in deference to the character of symptoms and the idiosyncrasies of each patient.

No thoughtful physician should resort to mere formulæ, however authoritatively advanced, nor degrade his art by trusting to routine.

Statistics thus far have proved that among the host of remedies proposed for the treatment of diphtheria not one is entitled to superior confidence. There are local resorts with which of course we are all familiar, to dissolve the pseudomembrane, and there are also others supposed to act antiseptically, and so bring about chemical changes to modify or annihilate micro-organisms.

To a limited extent we have already constituted the cow a medical dispensary, but if we are henceforth to look for other therapeutic resources to the goat, the horse and the dog, to make way for new systems of practice cogitated in the chimeric brains of French and German theorists, let us speedily encourage stock farms, direct all pharmacies to be closed, and urge the dismissal from their dignified perches of all lecturers upon materia medica.

In order to sustain the probable virtues of antitoxin, the attempt has been made, by enthusiasts in its behalf, to compare its immunizing effects with that of inoculation for small-pox, but brief consideration will serve to dissipate the comparison, since the effects are in no way identical.

In the instance of vaccination we in fact produce a manifestation similar to variola, whereas, by the use of antitoxin, neither local nor constitutional effects ensue bearing even remote resemblance to diphtheria.

In this last-mentioned disease, the philo-antitoxinite simply injects under the skin a serum, the product of an infection, trusting with blind infatuation that it will search out and rout from the human system a previous possessing infection. In instances of small-pox we confidently expect that one attack will protect against another, whereas repeated attacks of diphtheria in the same subject are exceedingly common.

For years past I have advocated the administration of remedies in disease by the avenues of the lymphatics. If therapeutic resources, of which we happily have so vast a number transmitted to us through generations past, have the virtues that are attributed to them, it is of essential importance that they should be addressed in all their purity and potency as directly as possible into ailing bodies through such channels as will assure avoidance of dilution or chemical change in its salutary route, and so avoid encumbering the digestive tract which needs most jealous care throughout the treatment of the disease.

It cannot be said that for centuries past to the present day the zealous cultivators of our cherished art have been blundering along in continued ignorance, and trifling away human lives entrusted to their care. "Theories," it has been remarked, "are the mighty soap bubbles with which the grown-up children of science amuse themselves." And we borrow from foreign sources too many of these vain toys, whose only merit is their mystery, and trifle with them ourselves until they collapse.

It is pleasing to note, however, a return of good sense abroad, and that the waves of skepticism are starting in various directions, calculated to engulf the delusive claims of antitoxin in like manner as befell the fallacious lymph of Koch. In France the treatment is discredited, and recently the learned bodies in Moscow have denounced its fallacy is terms not to be mistaken. The *British Medical Journal* laments the fact that the weekly mortality in Paris from diphtheria shows a steady increase over previous years, notwithstanding the fact that antitoxin is "universally used."

Intubation and tracheotomy are sheet-anchors in one of the most serious complications of the disease, that of obstruction from exudative deposit. Whenever this exigency threatens, the case may be considered in a desperate condition. The former procedure is usually safe, when skilfully practiced; the latter, comparatively considered, will rarely afford permanent relief.

Intubation should always be early practised, with the hope of giving a greater chance of life to a patient who, without it, must inevitably perish from asphyxia; but, should the obstruction extend below the furthest reach of O'Dwyer's tube, or when pneumonia exists, or when the disease is an immediate sequel of scarlatina or measles, we may look upon such cases with superadded anxiety.

When we consider the perils which environ this general disease, the prostrating toxemia, the immediate danger of paralysis of the heart or respiratory muscles, and the surely prospective invasion by diphtheretic pellicle of any wound inflicted, a resort to either act of aggression would seem to be specially contra-indicated. Yet instances are upon record of lives saved by the timely resort to these heroic measures, and I myself have snatched cases of diphtheria from immediate dissolution by early recourse to intubation.

While with great degree of hope I am in the habit of practising intubation, I always hesitate to resort to tracheotomy.

To recount the various remedies which have from time to time been put forth for the cure of diphtheria, would be a useless as it would be a vast undertaking. Every hopeful promise from the vegetable and animal kingdoms has been exploited, until finally we seem now to be in the presence of the *ultima Thule* of resorts, and those of us who have not quite lost our reason stand aghast at the extravagant claims of a treatment as treacherous as it is grotesque in character.

With the general acknowledgement of the protective power of vaccine—that richest gift which science has laid upon the altar of humanity,—a natural and a longing tendency has possessed the medical mind to search for new prophylactics in the same line of discovery. Though the profession is yet adrift from the attainment of such coveted secrets, we trust the day is not far distant when more fixed anchorages of hope in the presence of disease than we now have, will be added to the domain of preventive medicine. Happy, thrice welcome, will be the day when another similar gift shall be added to the garland which adorns the forehead of our god-like art!

Acute Rheumatism in Children.

℞	Sodii salicylatis	dr. iss
	Potassii iodidi	dr. ss
	Tinct. aconiti	gtt. x–xv
	Aquae	oz. ij

M. Sig.—One dram, t. i. d.—CAILLE.

—*Medical Record.*

A NEW BRACE FOR CERVICAL SPONDYLITIS, WITH REMARKS ON CERVICAL BRACES IN GENERAL.*

BOSTON MEDICAL FEB 18 1901 LIBRARY.

By PHILIP HOFFMANN, M.D.,
St. Louis, Mo.

Member of the American Orthopedic Association; Chief of the
Orthopedic Clinic (Polyclinic), Medical Department
Washington University, etc.

THE ideal mechanical treatment for cervical spondylitis is the one that most successfully immobilizes the affected vertebræ, removes the superincumbent weight of the head, and relieves pressure between the inflamed surfaces. The one that best accomplishes these three principles is, without doubt, recumbency combined with head traction. It often happens, however, for some reason that the recumbent treatment cannot be applied, and that the surgeon is compelled to resort to a brace which permits locomotion.

Many different braces have been devised and are in use, but so far as the writer has studied them they may all be included in three classes: (*a*) the indirect head support from the pelvis or jury-mast; (*b*) the direct head support from the pelvis; and (*c*) the direct head support from the shoulders, or the collar and cuirass.

(a). *The Jury-mast* supports the head by means of a suspension apparatus attached to a body-brace with its base of support at the pelvis.

The objections to this form of support are:

1. It is not direct but through a circle, passing over the head and supporting it as in a swing.

2. It is not rigid, as it is in part made up of straps requiring constant care and adjustment.

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* Read before the American Orthopedic Association at Washington, D.C., May 1 1900.

3. It allows motion of the cervical spine.

4. The distance between the base of support and the head is too great.

5. It is apt to slip downward over the iliac crests and make the traction unreliable.

6. It is very unsightly and immediately attracts attention when worn in public.

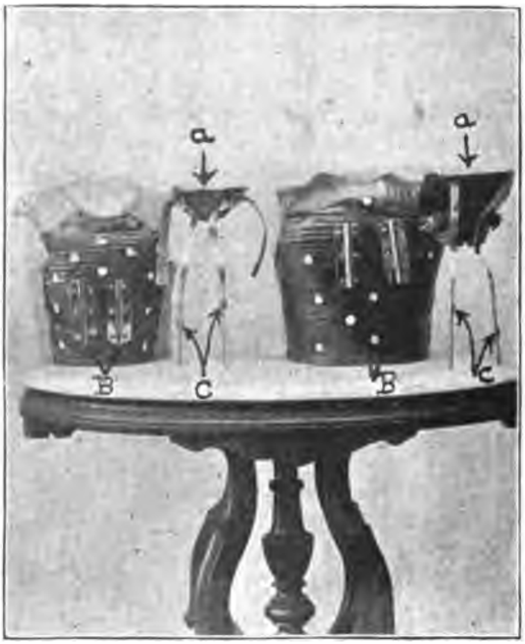

Fig. I.—Showing the four separate parts of the brace.

(b). *The Direct Head Support* from the pelvis is attached to a body-brace with its base of support at the pelvis. The support reaches the chin and occiput directly without first passing over the head. For this reason it is better than the jury-mast.

The objections are:

1. The distance between the base of support and the head is too great.

2. It is apt to slip downward over the iliac crests.

(c). *The Cuirass and Collar* support the head directly from the shoulders. They are not open to the same objections as the splints, which have their fixed points at the pelvis.

The apparatus I wish to present belongs to the cuirass type, with, however, a new principle. None of the braces already alluded to provide for traction to be regulated on the patient, except in a crude way the jury-mast, in which, by adjusting the suspension straps, the height of the chin and occipital pieces can be changed. In some braces the upright supporting the head-rest can be raised and lowered; but the purpose of this mechanism is to fix the support in a permanent position and not for easy and daily regulation of traction when the patient is wearing the brace.

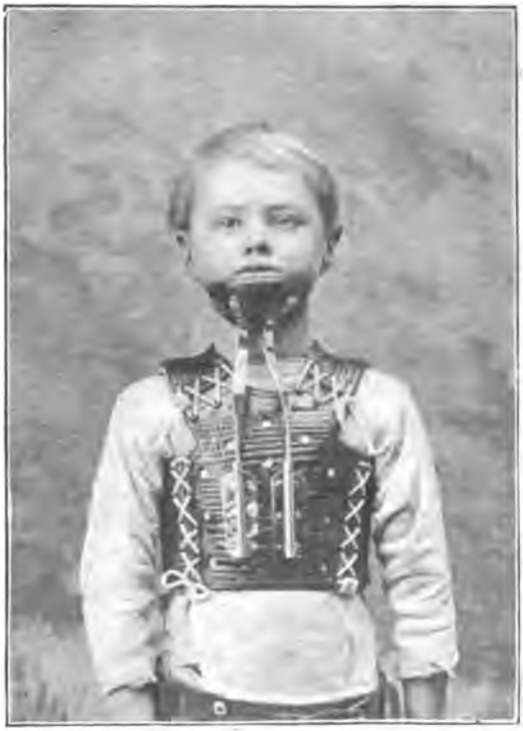

Fig. II.—Front view.

The writer's brace is shown in the photographs. The body part is of sole leather or skirting, and is composed of an anterior and a posterior half coming over the shoulders and lacing together in front. The chin and occipital cups are also made of hard leather. Two steel uprights in front and two behind, flat above and ending below in a screw with a fine thread, are riveted, respectively, to the chin and occipital cups, *aa*. The screw ends play in snug-fitting tubes, *bb*, which are riveted by means of attached plates to the chest and back pieces of the cuirass.

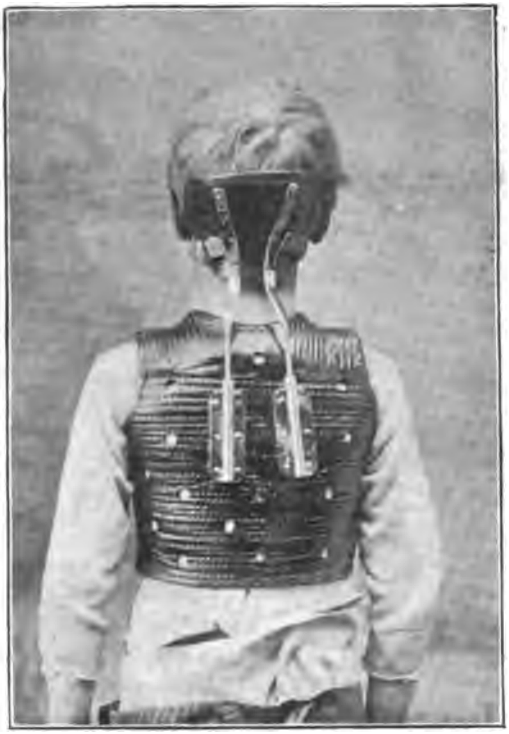

Fig. III. Back view.

After the brace is once in position the required amount of extension is made by means of nuts, *cc*, which play upon the screws. The lower the nuts are placed upon the screws, the higher the head-pieces are carried.

The chin and occipital cups are connected by straps under the ears.

Besides furnishing traction and relief from the superincumbent head-weight, the brace also serves to fix the contiguous dorsal vertebræ. In upper dorsal disease I would advise extending the cuirass to the pelvis, thus giving additional support from that point.

The leather work is shaped over a plaster of Paris cast of the parts by the methods described by Dr. Steele.*

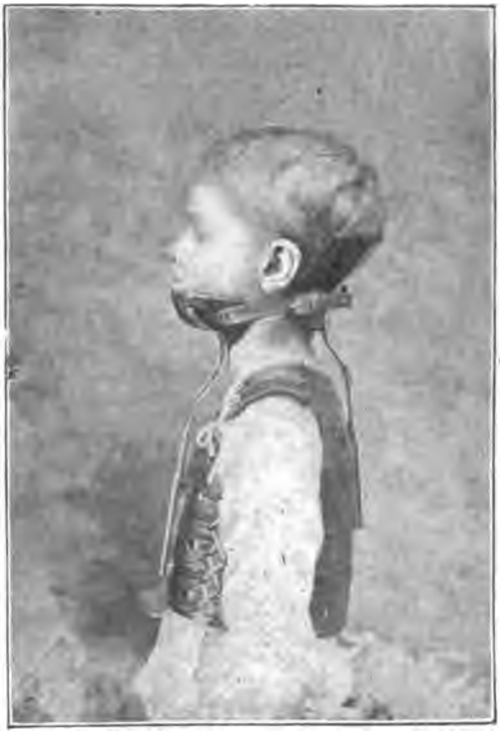

Fig. IV. Side View.

The photographs are good illustrations of the rigid support and excellent uplift afforded by the brace.

For poor patients the cost of the brace can be materialy lessened by substituting plaster of Paris for the leather work.

705 North Channing Avenue.

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* *Courier of Medicine*, July, 1899.

EDITORIAL COMMENTS

The Diagnosis of Pulmonary Tuberculosis in Young Infants

In a review of an article by Bertherand the *Gazette des Hôpitaux* calls attention to the peculiar characteristics presented by pulmonary tuberculosis in infancy. It is often secondary to another disease, while its physical signs differ from those usually found in adults. To be sure of our diagnosis several points have to be considered. The study of the clinical symptoms of the patient does not often furnish any positive sign; heredity especially is often far from throwing any light on the subject. Tubercular babies are taciturn and easily examined. Emaciation is often marked; absence of fat causes the face to be wrinkled; the facial bones are prominent, the eyes are deep in their sockets, the mouth seems enlarged. The sutures are not united, and the fontanelles persist. The abdomen is frequently distended and covered with blue veins, as in ascites; it is soft and compressible. Sometimes palpation shows thickening of the peritoneum or enlargement of lymphatic glands.

In contrast to the abdominal enlargement the thorax is generally broad at its base and narrow and constricted at its upper part. The ribs are very prominent beneath the skin. The extremities are lank, poorly developed and seem atrophied. The skin is thin, pale and delicate, while the hairs are remarkably developed.

The author does not consider slight general enlargement of the lymphatic glands as throwing much light on the diagnosis, as this condition is found in many other diseases. Lesions of the bones and joints occur sometimes in infants with pulmonary tuberculosis. Sometimes subcutaneous abscesses are found, due either to the bacillus of tuberculosis alone or to infection by the staphylococcus. Tubercular infants often have sweats just as older patients. Coldness of the extremities is frequently remarked. Fever is variable and may be absent in the more chronic cases. Digestion may be undisturbed at first, and occasionally the appetite is increased. These infants, however, do not gain in weight, and later functional disturbances of digestion occur. The curve of weight presents oscillations of increase or decrease which are quite characteristic. Tubercular ulceration of the intestine is rare. The often fatal enteritis is not specific, but due to a secondary infection.

Increase in size of the liver and spleen is considered of importance in making the diagnosis by some authors, but it occurs in many other conditions. Tachycardia is often found, and cyanosis particularly toward the end of the disease.

Physical signs are obscure. These signs have a minimum of value in the typhoid form of acute phthisis, which is characterized by sudden onset, irregular fever and extreme dyspnea. In the catarrhal form physical signs are more marked; all over the chest disseminated râles and noisy breathing are heard. Often the lung symptoms are localized on one side, and this has some value in favor of a diagnosis of tuberculosis. In caseous broncho-pneumonia pulmonary symptoms are most marked. This form may begin suddenly as a pneumonia or an acute broncho-pneumonia, and the physical signs are those usually observed in those affections. Temperature is less elevated than in simple broncho-pneumonia, and is often out of proportion to the frequency of the pulse. Catarrhal symptoms are perhaps less marked than in broncho-pneumonia. Hemoptysis is very rare, and dyspnea often marked.

So the clinical diagnosis of tuberculosis in children is sometimes difficult and often impossible.

There are cases in which diagnosis by means of injections of tuberculin may prove [illegible] sufficiently shown to the general [illegible] cular subjects react and that s[illegible] danger.

Of course finding the bacilli in the sputum would at once settle the difficulty, but unfortunately infants swallow their bronchial secretions. M. Bertherand would overcome this difficulty by withdrawing the secretions from the stomach with a tube and after the infant has awakened in the morning and has had a few paroxysms of coughing. X-rays can only reveal quite exterior lesions while their use is necessarily limited. No one method can be depended upon and all should be used as far as possible.
T.

The Hue and Cry Against Patented Therapeutic Agents of American Origin

We have often asked ourselves what is the cause of the abhorrence of patented chemicals and drugs of American origin manifested by a certain part of our medical profession. The very mention of one of these products of our chemical industry will precipitate a violent attack of spasmodic indignation on the part of these physicians. The hue and cry against new drugs of American origin goes on relentlessly in our medical societies and in the columns of the current medical publications.

The curious associated symptom of this peculiar syndrome, however, is the perfect equanimity with which these very gentlemen advocate the use of the innumerable chemical and pharmaceutic products—patented, of course—which bear the magic legend, "Made in Germany", an inscription which evidently constitutes the "open sesame" into the therapeutic sanctuary of these practitioners. The frequency with which these doubly patented foreign products are mentioned in our standard textbooks, the numerous references to their therapeutic virtues in medical journals which claim, and in some few instances deserve, the title of strictly ethical publications, is simply unaccountable when we remember that the authors of most of the books and articles aforesaid would spurn with a flush of righteous indignation the very thought that a new drug of American origin has any claims to scientific recognition, much less to admission into the Pharmacopeia.
S.

SOCIETY REPORTS

THE MEDICAL ASSOCIATION OF THE GREATER CITY OF NEW YORK.

Stated Meeting held at the New York Academy of Medicine on Monday evening, April 9, 1900.

The President, Dr. ROBERT F. WEIR, in the Chair.

DISCUSSION ON DIPHTHERIA

Dr. JOHN BLAKE WHITE read a paper on **The Diagnosis and Treatment of Diphtheria** (vide. PEDIATRICS. Vol. X., No. 2).

Dr. HENRY DWIGHT CHAPIN made some remarks on **The Heart and Circulation in Diphtheria.**

He said in the severe types of diphtheria in which there is a heavy mortality the disease is almost always attended by a rapid failure of the heart. This is most frequently met in the septic type of diphtheria. In this class of cases, which are exceedingly fatal, we have abundant false membranes in the throat, and in addition a marked invasion of the glands about the neck, while the nose is plugged up. In cases of this kind there is a mixed infection; the Klebs-Loeffler bacillus is combined with the streptococcus and other bacteria. Whatever the treatment employed, recovery takes place very rarely. As the case progresses the pulse becomes rapid and feeble, and great prostration with marked pallor of the countenance ensues. Finally there is stupor and then death.

There was one point to which the books had not given sufficient attention—the grave significance of vomiting. Dr. Chapin said that he had noticed that if vomiting occurs with a feeble pulse, it is almost invariably fatal. This kind of vomiting, however, is not to be confounded with that which is due simply to over-distension of the stomach with material given as nourishment. Sometimes this vomiting does not come on for a considerable period after the symptoms of heart failure have been noticed.

Another feature which is an indication of the gravest danger in diphtheria is a distinct and marked slowing of the pulse. A few illustrative cases were given.

A boy, eight years old. Ill for six days; in two days the pulse dropped to 60° F. Within a few hours vomiting set in, and three days later the child died.

A girl seven years old. On the day before death, the pulse which had previously been 115 to 120, fell to 42.

A girl four years old. The pulse dropped from 128 to 66. The next day after this occurred, however, the pulse went up again, and after this it was characterized by great irregularity.

A boy six years old. The pulse fell to 60 and afterwards to 38. In three days the child died, the pulse before death going as high as 104.

A boy five years old. This was a most extraordinary case. The pulse, which had been rapid, dropped to 28, and for two days continued 28 to 30. At the same time the cardiac sounds, as shown by the stethoscope, remained quite distinct, while the action of the heart was fairly strong.

It should be borne in mind, however, that this marked slowing of the pulse does not invariably indicate a fatal result. Thus, in one exceptional case, that of a girl of thirteen, the pulse, which had been 90, dropped in two days to 40. It remained about that for three days and then went up to 60, and to 70.

In these cases of heart weakness, in addition to other treatment, it must be insisted that the patient be kept in a recumbent position. The physical signs, however, must always be interpreted by the rational signs, as there is a direct relation between the general disease, and the condition of the heart. In many instances the patients improve by being allowed to get up and to run about. When, then, we have a feeble pulse, with vomiting, pallor, etc., there is always good occasion for alarm; while in a case which may present the same physical signs, but without evidences of prostration, we need feel little uneasiness.

Dr. Chapin said he relied for support of the heart principally upon whisky, strychnia and nitro-glycerin. He had not used digitalis to any great extent, as he was somewhat afraid of its action. In the slow pulse to which he had referred strychnine was of no value. In many cases at the Willard

Parker Hospital morphia given by hypodermic injection has proved of very great service. It both keeps the child quiet and at the same time steadies the action of the heart. Even to an infant of two years 1/20 of a grain of morphia may sometimes be given with safety. There can be no question that lives may be at times saved by keeping the patient quiet, and at the same time properly supporting the heart.

Dr. John Winters Brannan read a paper on the **Treatment of Diphtheria as Carried Out in the Willard Parker Hospital.** He spoke of the great advantages derived from the use of antitoxin and described the manner of its administration at the hospital. He also described the method of irrigation employed there, and spoke of its great superiority over the local treatment formerly in vogue. Incidentally he referred to various remedies which were used from time to time according to the exigencies of special cases. As to the mortality in diphtheria, he said it was noticeable that since the introduction of antitoxin the deaths from certain complications had very greatly decreased, while the deaths from others, on the other hand, increased. Thus there was now a much smaller percentage of deaths from laryngeal stenosis than formerly, while the proportion of deaths from pleuropneumonia had markedly increased, the statistics showing that 53 per cent. of all the deaths were due to this cause.

Dr. Joseph E. Winters said that fifteen years ago he described and demonstrated before the Pediatric Section of the New York Academy of Medicine the irrigation treatment mentioned by Dr. Brannan. He wished to say that at the present time that plan of treatment seemed to him to be rather overdone at the Willard Parker Hospital.

Several years ago he had made a resolution that he would never say another word in regard to the antitoxin treatment of diphtheria. It was sometimes harder to break a resolution than to make one, but he was here to-night in consequence of certain statements which he had seen in the *Medical Record* in the report of a recent meeting of the New York County Medical Association. Having given a number of statistics for different years at the Willard Parker Hospital, Dr. Winters made the statement that there has only been one year since the introduction of the antitoxin treatment there in which the mortality from diphtheria has been as low as it was before the use of antitoxin, and that was in 1898.

But what is of more consequence than statistics, he went on to say, is the individual case. He then referred to a case at the Willard Parker Hospital in which antitoxin had been administered before the patient was admitted. The prognosis seemed good, but in the course of a day or two a rash developed. Such an occurrence always made him suspicious of danger. A few days later it was found that albumin had appeared in the urine. Then the temperature went up. Ecchymotic blotches made their appearance, and the case went on rapidly to a fatal termination. There are plenty of other fatal cases due to antitoxin. Hubbard had reported three in which the patients died in convulsions. Craig, of Jersey City, who was originally an ardent advocate of antitoxin, had reported that in the last five cases in which he had employed it the patients died with suppression of urine. In a case which he himself had seen some months ago in consultation with Dr. Ellsberg, antitoxin was given, against his advice, and this patient also died with suppression of urine. It was a child of 18 months. Sewel, of New Canaan, Conn., had reported that in 5 out of 7 cases in which he used antitoxin, the patients died.

But cases of this kind might be cited for a whole evening. Why was it that we had albuminuria so frequently after the use of antitoxin? Why was it that antitoxin cases presented a clinical picture so entirely different from the classic descriptions of Bretonneau and Trousseau? Because this agent dissolved the blood corpuscles; and this was why he claimed that it was dangerous, Every man who wished to use it should first go and make a study of its effects in the wards of the Willard Parker Hospital of New York or the Municipal Hospital of Philadelphia. Roux, of Paris, had made the statement that the mortality in diphtheria had been reduced about one-half since the introduction of antitoxin, but the real reason for this was that now the cases of diphtheria are carefully separated from those of scarlet fever and other diseases, which was formerly not the custom.

Dr. HENRY W. BERG said that the very great value of antitoxin is now so well recognized by the world at large, that no opposition from however distinguished a quarter can have any very appreciable effect in interfering with its general use by the profession. All who see diphtheria to-day find it a very different disease from what it was formerly, and Dr. Winters was entirely correct in stating that Bretonneau and Trousseau would have difficulty in recognizing it. As he himself remembered it twenty years ago, it was a much filthier and more intractable disease than at the present time. Instead of decrying the use of antitoxin he thought a man's time might be much better spent in studying the best way of employing it. We have as yet no definite rules for its administration. In any given case we use one or another dose, to the best of our judgment, to be sure, but without any attempt at precision; and it is greatly to be desired that a series of investigations should be made for the purpose of determining if possible an accurate system of dosage.

There are some disagreeable features accompanying the use of antitoxin. But what remedy has not its disadvantages? Take opium, for instance. The use of this drug in enormous quantities in the treatment of peritonitis was certainly a very great advance over previous methods and resulted in the saving of many lives, but, at the same time, it must be confessed that in some of the fatal cases it was more or less problematical whether the patient died from the peritonitis or from the opium. One of the unpleasant results of antitoxin is the production of rashes. This phenomenon is noted in from 20 to 50 per cent of the cases in which it is used, according to observations made in the Willard Parker Hospital. These rashes are disagreeable for more reasons than one. Thus, they produce fever, and complicate diagnosis. In some instances it is extremely difficult to make a differential diagnosis between a case of this this kind and one of scarlet fever supervening upon the diphtheria.

Dr. Berg has noted the following varieties of rashes resulting from antitoxin:

1. Simple erythema.
2. Erythema multiforme, resembling scarlet fever.
3. A morbilliform rash, resembling measles.
4. An urticarial rash, resembling ordinary urticaria.

In the case of the morbilliform rash the eruption makes its appearance six, eight, ten, or twelve days after the inoculation; while in that of the scarlatina-like rash it develops within two or three days. It will be observed that these periods correspond with the incubation period of measles and scarlet fever respectively. He had tried to find out what it is that produces these rashes, and has arrived at the conclusion that they are due to the effect of the serum itself, and not to the diphtheria antitoxin, of which it is the vehicle. Thus it has been found that healthy horse serum (containing no antitoxin), injected into healthy children not infrequently gives rise to rashes of the character described. One European investigator discovered that when he filtered his antitoxin serum it was much less liable to produce rashes than when this was not done. During the last year Dr. Berg has followed this plan, and since it was adopted the number of rashes has decidedly diminished.

Why should the skin develop a rash? A Russian observer has concluded from his researches that it is the part of the skin to elimihate the antitoxic or other serums introduced into the system. In the eruptive fevers, like scarlet fever and measles, it is believed that the toxin is eliminated by the skin; and in like manner the antitoxin rash is the result of an attempt on the part of the skin to get rid of a foreign material floating in the blood. In making the diagnosis between scarlet fever and an antitoxin rash it should be borne in mind that the scarlatinal eruption is uniform over the body, while the latter is, as a rule, more or less limited in area. Thus, if the rash is found upon the back, but not upon the abdomen, or vice versa, we may safely conclude that it is antitoxic and not scarlatinal. If, however, the antitoxin rash, as is sometimes the case, is pretty generally diffused on the whole surface, the diagnosis becomes more difficult; and in all doubtful cases it is the safer plan to keep the patient isolated until a positive diagnosis can be arrived at.

Dr. J. EDWARD HERMAN, of Brooklyn, said that the whole foundation of the antitoxin theory was so replete with error that it required only the breath of reason to bring the structure toppling to the ground.

Many authorities were quoted to show that the Klebs-Loeffler bacillus bears no etiologic relation to diphtheria; and yet Behring lays down the dictum that diphtheria antitoxin treatment can be effective only when diphtheria infection is due to the Klebs-Loeffler bacillus. Hoebner was not able to find this bacillus once in 113 cases of clinical diphtheria during life and only once after death. Delépine's careful examination in 14 cases of typical diphtheria failed to reveal the Klebs-Eoeffler bacillus. Von Ranke found a mixed infection in 93 per cent of 163 cases. Kanthack states that streptococci are rarely absent, whether the case be mild or severe, if a series of cultures be made in every case. Commenting on the report of an epidemic of rhinitis, in which the Klebs-Loeffler bacillus was present in every case, but in which there were no other indications of disease, such as fever or glandular enlargements, Kanthack, who is professor of pathology in Cambridge University, says: "This is a further exhibition of the view which is gradually gaining ground, that the diphtheria bacillus is formed in many lesions which are not diphtheritic." Professor Baumgarten, of Tübingen, says: "My long researches have brought out the fact that streptococci are constantly present in diphtheritic membrane, and that it is possible to prove their presence in every case of genuine diphtheria which is examined judiciously and carefully." Fraenkel insists that streptococci are the cause, and that the Klebs-Loeffler bacillus alone never produces diphtheria. In Aaser's hospital 20 per cent of the children had Klebs-Loeffler bacilli in their throats. The remainder were transferred to another ward, where antitoxin was given for the purpose of immunization. Three of the latter were attacked with diphtheria, while those having the Klebs-Loeffler bacillus in their throats suffered no ill effects from their presence. Vassant found the Klebs-Loeffler bacillus in 26 cases of chronic rhinitis, although in none of them was there any symptom of diphtheria. Of Hennig's cases of clinical diphtheria, carefully examined by two eminent bacteriologists, in only one-half was the Klebs-Loeffler bacillus found. There were more evidences of postdiphtheritic paralysis in those cases which did not show the bacillus than in those which did. Loerensen found this microorganism in 326 scarlet fever convalescents, but of these cases only 15 per cent showed symptoms of diphtheria. Of the 326 cases but one died, and that patient had pneumonia. The good result was not due to antitoxin, for of the whole number only 2 received serum treatment. And yet the mortality of true diphtheria complicating scarlet fever is notoriously great.

The assumption that bacteria produce disease by the toxin which they excrete leaves out of consideration two other very important ways by which the germs must work harm to the body. The first is that bacteria by their mechanical presence are a source of injury, from causing local disturbances of circulation by obstructing the small bloodvessels. The other is that bacteria, like all other forms of life, require nourishment to support their existence. What they consume is taken from the tissues of patients in whom they live. On this point Ziegler says: "The importance of such withdrawal cannot be denied." These two weighty facts are entirely ignored in the laboratory. Only the toxin is injected in the horses which are used in the manufacture of antitoxin. The antitoxin theory calls for the serum of an animal immune, or rendered immune, to the disease. At no time does the horse have diphtheria. He is only rendered immune to comparatively large doses of toxin cultivated in an artificial dead medium. Bacteriologists do not know positively that the toxin which they extract from their experimental cultures is the same substance that produces the symptoms of disease when bacteria are present in the body. It is more probable that the toxins they use result from the decomposition of the substances composing the medium in which the bacteria grow.

Dr. ADOLPH RUPP said that Monti, of Vienna, one of the highest living authorities, who was at one time a strong believer in antitoxin, has come to the conclusion, from the results shown by statistical reports, that the agent is of no value. Accordingly, he makes the remark that now the tables are turned. The statistics in favor of antitoxin are so unsatisfactory, and the dosage recommended varies so much that the practitioner, before resorting to its use, feels constrained to pause, like the elephant who insisted on testing the strength of the bridge before venturing upon the structure. Dr. Rupp, having referred to the fact that Behring was not a physician, gave an account of the first case in which he himself used antitoxin. It was one of septic diphtheria, and the serum was injected on the seventh day. In spite of the large dose (which all the members of the Charity Hospital Alumni Association, where he reported the case, thought was excessive), the membranes continued to spread. From the very hour the injection was made the pulse increased in rapidity, and in spite of the free use of champagne and strychnine, the patient died. Other cases might be related, and he agreed with the opinion expressed by Dr. Winters.

Professor Epstein, of Göttingen, he went on to say, states that although so many reputable physicians believe in the efficacy of antitoxin and use it in their practice, he has found the results in that city just the same as before its introduction. One young lady who had recently had diphtheria told Dr. Rupp of the excellent results from antitoxin in her case, and when he asked her how long the attack lasted, she replied six weeks. There is a large amount of statistics going to show that the medical practitioner is perfectly justified in not administering antitoxin if he does not see fit. He had recently received a letter from a physician practising in a Vermont village, in which he stated that if he declined to give antitoxin to any case of diphtheria to which he was called he felt perfectly sure that he would have a lawsuit on his hands within twenty-four hours. In 41 cases he had had 1 death. He had used antitoxin in all of them, but was convinced that they would have done just as well without. His colleague in the same village, had had 11 cases, with one death.

The President, Dr. WEIR, said that it had been rather depressing to him to listen to such a discussion as that of this evening, because it brought home to him what he had met with in his own experience in surgery. None of the serums had proved satisfactory in their results. The last to try the confidence of the surgeon was the one which seemed most promising of all, namely, tetanus antitoxin. Last summer in the city of New York and its vicinity it was put to a most severe test, and it was found wanting.

Dr. ACHILLES ROSE expressed the opinion that carbonic acid gas would prove a most valuable remedy in diphtheria. He had employed it in one case, and the results were very satisfactory. It was administered by means of the simply little apparatus which he had exhibited at the November meeting of the association, and he regarded its use in this manner as superior to the method of irrigation described by Dr. Brannan.

Dr. White closed the discussion. He said that he had never seen a case of diphtheria cured by antitoxin. He had seen cases recover after its use, but he had never seen any decided benefit from it. Dr. Brannan's report of the treatment employed at the Willard Parker Hospital was certainly very interesting. He could not understand, however, when so much attention was paid to local treatment and to internal medication, why such great efficacy should be attributed to the antitoxin. In confirmation of the results noted by Dr. Winters he spoke of the case of a boy who died in a convulsion sixteen hours after an injection of antitoxin. Before this everything promised well, and it seemed to him that the fatal result could be due to no other cause. The results of the researches given by Dr. Berg were of great interest, but in his opinion they afforded a strong argument against the use of antitoxin; showing, as they did, that nature was decidedly antagonistic to this foreign invader.

In connection with the discussion on diphtheria, Dr. John Rogers, Jr., presented three interesting **Cases of Intubation and Tracheotomy**. They were as follows:

Ida Bisham, 9 years old, was intubated for diphtheria at the Willard Parker Hospital in December, 1896. Tube retained. In February, 1897, autoextubation necessitated tracheotomy. Stenosis persisted, and in March, 1897, she was reintubated. The stenosis still persisted, in spite of the use of O'Dwyer's special tubes, astringents and small tubes. Patient transferred to Gouverneur Hospital in October, 1897. Autoextubation necessitated another tracheotomy in November. No improvement resulted, and in January, 1898, laryngotomy was performed. Suture of thinkened tissue to thyroid alæ resulted in infection and necrosis. Intubation again in August, 1898, and the tube was changed from time to time, until in October, 1898, the largest size child's tube was introduced. This was worn without change for six weeks, and in November, 1898, the stenosis was cured. Result now perfect. This case was shown at the Surgical Society, in February, 1900.

Max Rothstein, 6 years old, intubated for diphtheria at the Willard Parker Hospital in February, 1898. When the tube had been worn a week autoextubation necessitated tracheotomy. In April following, intubation repeated. Autoextubation again resulted, and again tracheotomy had to be performed. Patient was sent to the Gouverneur Hospital, and on October 19th the larynx was dilated with urethral sounds, and 5–7 child's tube inserted. Tracheotomy wound healed. Ten days later patient was intubated with largest size child's tube. This was left in position for six weeks. After removal in December the larynx remain open. This case was also shown at the Surgical Society.

Mary Markowitz, 10 years old, intubated for diphtheria at the Willard Parker Hospital in May, 1896; was tracheotomized for retained tube and autoextubation in July following. Operation followed by curetting, astringents and O'Dwyer special tube. Transferred to Dr. Clinton Wagner at the Metropolitan Nose and Throat Hospital, and laryngotomy was performed by him in October, 1896. Excision of thickened tissues. The stenosis was not cured, and later tracheotomy had again to be performed. In October, 1897, laryngotomy and excision of cicatrices by Dr. Hope. Some improvement followed under intermittent dilatation. In January, 1900, patient transferred to German Hospital. It was found that breathing was possible for a short time, but not permanently, without tracheal canula. Intubated in January with largest size child's tube. Tracheal fistula closed. Six weeks later when tube was removed it was found that there was some improvement. The same tube was then replaced for six weeks longer, which have not yet expired.

To prevent infants from crawling over the floor and so exposing themselves to the germs of disease as well as to cold draughts, a reader suggests a raised platform some 6 or 8 inches above the floor. Upon it playthings may be placed. It may be improvised out of packing cases should nothing better be obtainable.

To Disguise the Taste of Castor Oil.—Dr. W. F. Beck, of Vermilion, Ohio, writes that the taste of castor oil may be disguised by adding an equal part of catsup. Cod liver oil may be given in the same way. What brand of catchup he uses he does not say.

BOOK REVIEWS

THE MEDICAL DISEASES OF CHILDHOOD. By Nathan Oppenheim, A.B. (Harv.), M.D. (Coll. P. & S., N. Y.). With 101 original illustrations in half-tone, and nineteen charts. Pp. xx, 650. New York: The MacMillan Company, 1900.

The author of this volume advocates "a greater use of logic and a lessened reliance upon empirical methods" in the study of pathologic conditions in children. He emphasizes also the necessity of paramount attention to disease from the diagnostic standpoint. One whose hopes are raised by these claims will not be altogether satisfied by the perusal of the book. The work as a whole is incomplete, and savors much more strongly of the medical library than of the laboratory and the bedside.—The pathologic anatomy is good as far as it goes, but the illustrations are in many cases practically valueless from the hopeless blurring that is sure to accompany half-tones of micro-photographs. Medical writers are surprisingly slow to learn ·that the imperfectness of half-tone impressions upon ordinary paper quite unfits that process for successfully teaching microscopic appearances. In this volume a practised pathologist can often only blindly guess at what many of the illustrations represent, and the perplexity of the student would be complete.—The symptomatology is also gravely deficient. In cardiac diseases, for example, the writer does not appear even to have heard of Hochsinger's famous contentions in his classic monograph. And the statement that "anemic murmurs in children rarely cause much difficulty in diagnosis" means, it is to be feared, only that the the author has not often followed his cases to the post mortem room. The accounts of the diseases of the blood are so imperfect that they might as well have been omitted altogether. The notes on diagnosis are at times good, at times perfectly useless; to dismiss with two lines the distinction between chronic broncho-pneumonia and pulmonary tuberculosis in small children where sputum is not to be had, shows a surprising lack of perspective.

It is to be regretted that in the chapter on malaria the dangerous business of puncturing the spleen to draw blood for diagnostic examination should have been mentioned without a warning note. By most authorities here in America splenic aspiration for diagnostic ends is no longer considered a justifiable procedure.

Barring the illustrations, the book is a fine specimen of the bookmaker's art and misprints are not numerous, though "alimentary track" (several times) and other similar misfortunes might have been avoided.—The English is on the whole very good; the occasional amusing lapses from propriety, such as "overweening importance" (preface) etc., may be fairly attributed to mere inadvertence.

ABSTRACTS

THRUSH.

H. de Rothschild (*Le Progrés Médical*, March 3, 1900), discusses the clinical features and the treatment of this common affection of infancy. The parasitic stomatitis is not a grave disease of itself, but it may accompany a very dangerous condition—athrepsia.

In neglected cases, the parasitic growth of the *oidium albicans*, the etiologic factor of thrush, may involve the mouth, the palate, the pharynx, the esophagus, and may even reach the stomach. The diagnosis is simple. The parasitic growth is distinguished from masses of milk curd by the fact that the latter are not adherent, while the masses of oidium may be removed only with great difficulty.

In glossitis and stomatitis, due to other causes, e.g., diphtheria. aphthæ, etc., the mucosa is ulcerated and presents a totally different appearance from the characteristic white or yellowish masses of oidium. The presence of the parasite confirms the diagnosis.

In speaking of the treatment, the author emphasizes the prophylaxis of thrush. The disease is contagious and may be transmitted directly from one nursling to another in institutions. Appropriate diet and hygiene, especially as relates to cleanliness of the mouth, and of the nipples, bottles, etc., should be enforced.

In mild cases it will suffice to touch the affected parts with some alkaline solution, such as Vichy, lime water, solution of bicarbonate of soda, etc. These applications may be made by wrapping the little finger in a piece of very fine linen and touching the spots with this after having dipped it into the solution. In the graver cases a weak solution of bichlorid of mercury in alcohol may be applied in the same manner. One or two applications are usually sufficient.

Other methods of treatment are the application of perchlorid of iron once a day, or every other day (Comby) or of solutions of permanganate of potassium, 1:25, and the administration of three or four teaspoonfuls of a solution of resorcin, 1:100, in twenty-four hours (Baginsky).

A CASE OF BILATERIAL GANGLIONIC NEURO-GLIOMA OF THE FACE.

Clegg and Moore, in the *Medical Chronicle*, March, 1900, relate the case of a child, aged nine months, in whom the following condition was found: Two separate and distinct swellings, each the size of the child's nose, occupied the positions of the lachrymal sacs. The overlying skin was slightly discolored, but movable over the swellings. On palpation there seemed to be no pain, and the tumors gave a semi-fluctuating feelings. Both tumors were distinctly separated from the frontal bone by an interval of about 5 mm., but in the middle line over the nasal bones there was a thickening of the skin between the two tumors. The swellings were not attached to the skin, but somewhat movable. Both conjunctival sacs were normal, but a small bead of half dry, muco-purulent matter was always present over each inner canthus. The previous history was that at birth a small swelling was noted on the left side of the nose. The right swelling was only noted a few week's later.

The operation consisted in incising and dissecting out the whole of the masses. The wounds healed well, and the child is now in perfect health.

On microscopic examination, both tumors presented the same structure; they consisted of a sparsely cellular tissue enclosed within an ill defined capsule, derived from the adjacent muscular and connective tissues. In the former the most conspicuous elements were large ovoid cells, some provided with definite processes, and composed of finely granular protoplasm, in which were one or two large, oval, vesicular, lightly staining nuclei. These ganglionic cells were lying in the midst of a peculiar reticulum, consisting of delicate fibers, among which were embedded small oval nuclei, surrounded by a very scanty cell-protoplasm. Throughout the neuroglial basis there were many thin-walled capillary vessels, and here and there a larger vessel, with well-defined walls, coming apparently from the surrounding tissues,

The peripheral parts of the tumors formed, as already mentioned, a kind of ill-defined capsule derived from the surrounding tissues, and served to sharply define the limitations of the growth. Among the fibrous tissue, muscle fibers and blood vessels of which the peripheral zone was composed there was no indication of invasion by the tumor tissue.

As regards the nature of the tumors, Professor Delépine has expressed as his opinion that they were ganglionic neuro-gliomata, a view in complete accordance with their minute structure. The existence of the large ganglion-like cells, many with distinct processes embedded in a tissue, the peculiarities of which at once indicated its neuroglial nature, and the presence of doubtful nerve fibers seen in a few places, rendered the nature of the tumors beyond doubt. Concerning the pathogenesis of such tumors, it is probable that the majority must be regarded as originating from some part of the central nervous system, generally the brain, as a result of developmental disturbances. In the present case, it seems not improbable from a consideration of the tumors, and their existence since birth, that they might have arisen in connection with the olfactory lobes, which possibly, as a result of some localized hydrocephalic condition, had protruded through congenital fissures of the skull, and gradually become constricted off with the closure of such defects.

Such a view provides the most rational explanation of the various features which have been detailed.

THE CARE OF PREMATURELY BORN CHILDREN IN LYING-IN INSTITUTIONS.

E. Deutsch, in the *Archiv fur Kinderheilkunde*, Vol. xxviii, Part iv, 1900. The writer made a study of the methods adopted for the care of premature children in the various countries. He found that many things that had been worked out by hygienists were not made use of in the lying-in institutions. He addressed the following list of questions to every maternity hospital in Europe:

1.—What percentage of all births are premature?

2.—What is the mortality of premature infants?

3.—Has the institution an incubator?

4.—Is the incubator disinfected from time to time?

5.—Average time infants spend in incubator?

6.—Has the incubator decreased the death rate among premature infants.

7.—If no incubator in the hospital, how are premature infants taken care of?

8.—The mode of feeding?

The author then gives a tabulated statement of the answers received. In commenting upon these replies, he brings out that the percentage of premature infants is considerable. He notes that only a few maternity hospitals use incubators, and that the majority content themselves with wrapping the infants in cotton and with application of hot water bottles.

The indications for the use of the incubator in a premature infant are the temperature (if subnormal); the weight (if below 1000 gm.); and the age (if below 7 months). The children should be washed in a warm room but not bathed, as collapse is liable to occur. Wool is better than cotton for wrapping these infants, inasmuch as it retains heat better and absorbs secretions readily.

The feeding of premature infants is a difficult problem. Three things must be considered: the small size of the stomach, the deficient digestive power, and the weakness of the muscles used in nursing. The quantities to be given and the frequency of feeding vary as follows: In very weak infants 8-10 gm. every hour; at night every two hours. In stronger infants 20-40 gm. every two or three hours; at night every four hours. When nursing is possible a wet-nurse with easily flowing milk may be provided. The nurse must be one that has been delivered but a few weeks previously, and the breast-pump must be used to complete the emptying of the breast, which the infant cannot accomplish, in order that the milk may not dry up from deficient excretion. If the child is too weak to nurse, the milk may be poured into the nostrils during inspiration, or into the mouth by means of a spoon. Gavage, by means of a sterilized stomach tube, is also advisable. If woman's milk be not obtainable cow's milk may be diluted to the proper strength with water or with veal broth, and in some cases, asses' milk, or peptonized milk has been substituted.

In conclusion, the writer quotes a statement of Tarnier, to the effect that at the Maternité in Paris the modern methods of care for the prematurely born resulted in saving seven or eight times as many children born before term as before their introduction. He thinks that if these methods were more generally introduced and more conscientiously followed, the same statement could be made concerning the other maternity hospitals of Europe.

ON THE USE OF ANTITOXIN IN DIPHTHERIA, WITH SPECIAL REFERENCE TO SMALL AND FREQUENTLY REPEATED DOSES.

MUSSER, in the *University Medical Magazine*, discusses this subject, giving in detail thirteen cases in which he used the antitoxin in small and frequently repeated doses. He believes that the serum should be injected at the earliest possible moment, and that small doses will be sufficient in all but the very malignant, the complicated, and the laryngeal cases. All his cases recovered without sequelæ or complications, except one in which post-diphtheritic paralysis appeared. The temperature fell to normal and remained so in seven cases, while in five it was normal within three days, and in two very severe infections, within five days, He had but one case of albuminuria and erythema, and none of the general joint affections. The writer's method was as follows:

For children under 6 or 8 years the initial dose is 500 immunizing units, to be repeated at intervals of six hours if the fever does not fall, if the strength of the patient does not improve, or if the local manifestations are spreading. For children over 8 years old 1,000 units are used as an initial dose, and this is repeated, if need be, at intervals of eight to twelve hours.

INJURIES ABOUT THE SHOULDER AT BIRTH.

J. S. STONE discusses this subject in the *Boston Medical and Surgical Journal* for May 15, 1900. He sums up with the following conclusions:

True congenital dislocation of the shoulder, i.e., defective development of the scapula and head of the humerus is of extremely rare occurrence.

True traumatic dislocation of the shoulder at birth or in early infancy is of extremely rare occurrence.

Obstetrical paralysis which, as has been long recognized, is of Erb's type, is due probably almost invariably to a stretching, and in some cases to a rupture of the two upper roots of the brachial plexus, as is proved by anatomical study.

Obstetrical paralysis is usually recovered from entirely in the course of a few weeks or a few months. If recovery does not occur within this period, the prognosis is very much more serious, although improvement may occur even after the lapse of many years.

Any abnormality in the shape of the head of the humerus or in the glenoid in a case accompanied by paralysis or lack of development of the deltoid, supraspinatus and infraspinatus muscles is probably secondary to the paralysis, and if accompanied by a dislocation is not to be looked upon as the primary cause of the dislocation. Lack of bony development of a paralyzed arm may become very marked after the lapse of years, and this lack of bony development is not in any way to be regarded as proof of a congenital defect.

All early cases of obstetrical paralysis are to be treated by sling or bandage, which will support the paralyzed muscles and prevent dragging on the ligaments and injured nerves.

In cases of obstetrical paralysis which persist without improvement there is reason to hope that surgical intervention, looking to a union of the torn ends of the fifth and sixth cervical roots at a point from a quarter to three-quarters of an inch from their emergence from the canal, may be of benefit.

The subluxation resulting from the paralysis is to be treated by stretching or section of the contracted muscles and ligaments, by osteotomy, arthrodesis, or muscle transfer, according to the conditions present in each case.

NOTES ON FRACTURES OF THE LONG BONES WITHOUT DEFORMITY—THE SUBPERIOSTEAL TYPE OF FRACTURES IN THE NEW-BORN.

James Porter Fiske, in the *Journal of the American Medical Association*, March 31, 1900, gives a series of observations upon this subject. There is a type of fractures in children and young people in which there is no tendency toward displacement, which he styles subperiosteal fractures. Such fractures may be overlooked on superficial examination. The periosteum of the broken bone remains intact, and hence the fragments remain in place. There is usually a history of slight or moderate trauma, and, if recent, there will be no edema or ecchymosis. Pain is absent or slight; rarely severe. Deformity is usually absent, but in some cases there might be a slight sagging; never any over-riding. The function of the part is seldom impaired. There is no crepitus. In order to determine the presence of these fractures a very careful examination of the suspected bone must be made, the manipulations being so gentle as not to increase the damage to the affected structures. If neglected, these cases develop a certain amount of callus at the point of the break, or an angular deformity, due to the sagging of the bone. The writer's conclusions are as follows:

(1) Subperiosteal fractures usually present certain typical symptoms, and we should be able to recognize these lesions and differentiate them from the complete fractures. (2) Their union is characterized by the formation of a slight amount of callus, and solid union takes place in considerably less time than in the complete fracture. (3) In every contusion to the limbs in the young, no matter how slight, a systematic search should be made for this particular lesion. (4) In rickets there is a greater liability toward the occurrence of incomplete fracture, and especial liability during the stage of softening for the production of the subperiosteal fracture. (5) Many cases of subperiosteal fracture are undoubtedly converted into simple fracture through improper manipulation or by too forcible examination.

MYOCARDITIS IN INFANCY AND CHILDHOOD.

Henry Koplik, in the *Medical News*, March 31, 1900, says that myocarditis is, if not the most trying, one of the most important conditions met at the bedside of the sick infant or child.

Myocarditis has very often been found at autopsies in children who had died of infectious diseases. A number of observers have investigated the question as to the pathogenesis of this myocarditis in the infectious diseases of childhood, and their conclusions show that it is not the fever that is responsible for the alterations in the cardiac muscle, but the toxins of the disease themselves; the fever plays but a subordinate role. Myocarditis is an entity, distinct, always threatening, and sometimes fatal in these conditions. The symptoms, so far as the heart is concerned, are not due to the influence of the toxin upon the heart ganglia, but on the muscular fibers of the heart itself.

Myocarditis is far more frequent in infectious diseases of children than is supposed, when one considers the frequency with which it is found at autopsies. It is not necessarily fatal, however; in other words, a heart may have been the seat of myocardiac changes and still be restored to normal.

The infectious disease masks the effects of the toxin upon the heart, and thus we do not obtain a definite picture of myocarditis as it occurs in diphtheria, pneumonia, etc. The cardiac symptoms may appear at the outset of the disease or during the convalescence. A striking effect of serum therapy in diphtheria is the fact that after the injections the children will sit up and play in bed though their throats are covered with membrane. This means that the toxic action of the germ has been arrested and the heart muscle begins to recover its power.

Attacks of syncope, with weak flickering pulse occur in diphtheria, malaria, and pneumonia. Cardiac disturbances, due to overstrain of the muscle of the heart, are found in severe cases of pertussis.

In addition, the toxic influence of the disease produces weakness of the myocardium in these cases. Myocarditis may also accompany endocarditis in rheumatic heart disease of childhood. It is not always possible to make a diagnosis of myocarditis in the cases of infectious disease, for often there is a complete absence of cardiac symptoms until sudden death supervenes. In a large number of cases, however, there are certain warning symptoms, which must be carefully observed. To quote Dr. Koplik:—

" If, in the course of an infectious disease, we have attacks of faintness, pallor, vomiting, disturbed and very irregular heart action, a persistent distortion of the respiration and pulse ratio, as in adherent pericardium, it is certainly significant, especially if these attacks have a tendency to recur. If examination of the heart shows extreme weakness of the apex beat, weakness of the first sound, or disappearance of its muscular quality, greater intensity of the second sound at the apex, with intensification of the second sound at the pulmonic orifice, we certainly in these have danger signals of greatest moment. If, in addition, as in pertussis, we have other signs of cardiac insufficiency, such as a slight systolic blow at the apex, edema of the face and extremities, pallor and cyanosis, disinclination to exertion, constant drowsiness, it would be certainly narrow, in view of our pathological and experimental knowledge, not to entertain the possible existence of serious degenerative changes in the heart muscle."

In the treatment of such cases, we must foster the strength of the patient, not merely reduce the fever. Nutrition and stimulation are therefore indicated, and depressant drugs are to be carefully avoided.

FOREIGN PEDIATRIC JOURNALS.

Abstracts of all Original Articles Appearing in Foreign Journals Devoted to Pediatrics.

DIETSKAYA MEDITSINA, FEBRUARY, 1900.

4. **A Case of Tuberculous Meningitis in a Boy Aged Ten Years.**—By A. Kissjel. The case reported here is peculiar on account of the insidious onset, the patient's general condition continued to be good until six days before death, On admission there was headache and depression and toward the end a febrile movement, but no symptoms that would indicate the presence of any serious disease. A peculiarity of this case was also the partial and then the total loss of speech which the boy exhibited a few days after admission. The last days of the disease were characterized by the typical picture of severe tuberculous meningitis. On autopsy the diagnosis was confirmed, and the affection of the speech centers explained by the presence of a mass of tubercles on the pia mater over the third frontal convolution.

5. **A Case of Intussusception of a Portion of the Small Intestine, the Ascending and the Transverse Colon into the Descending Colon in a Child Aged Eighteen Months. Laparotomy.**—By A. Kissjel. The boy had been obstinately constipated for ten days before admission. From time to time he passed a little bloody mucus, and there was a prolapse of the rectum. The abdomen is enlarged, painful on pressure, and the intestinal loops can be plainly felt through the thin wall. In the left upper quadrant a firm tumor is felt about half the size of an adult fist. On rectal examination the fingers strike a sausage-shaped mass with an opening at its lower pole, 7 cm. from the anus. Laparotomy revealed the conditions described in the title. The operator did not succeed in liberating the invaginated gut, and only punctured the dilated portions of the intestine in order relieve the distension. The gut was sutured, and the abdomen closed. The child died of heart failure shortly after the operation. The autopsy revealed, in addition to the appearances found on laparotomy, gangrene of the cecum and appendix and fibrino-purulent peritonitis. The intestines were found firmly adherent by fibrinous tissue, and the author concludes that if the child had been brought to the hospital earlier, it would have been possible to disengage the intestinal obstruction and to save the patient.

6. **A Case of Noma following Measles.**—By A. N. Andrejeff. The treatment of this case consisted of scraping the affected surface with a sharp spoon and and rubbing of the clean area with iodoform powder. The mouth was washed with boric scid solution several times a day. After nine days the gangrene began to disappear, and the child recovered. The scraping only had to be performed once, and the applications of iodoform were repeated once daily until the formation of the scar was sufficiently advanced.

ANNALES DE MÉDICINE ET CHIRURGIE INFANTILES, MARCH 1, 1900.

1. **Congress of German Physicians and Naturalists, held at Munich, September 17 to 23, 1899.** An abstract of the proceedings.

2. **A Case of Progressive Nuclear Ophthalmoplegia.**—By Dr. AUSSET. The patient was a girl aged seven years. She was perfectly well until six months ago, when the attendants noticed a slight degree of strabismus. She complained of severe headaches, and from time to time had an attack of epistaxis. Shortly after this it was noticed that her right hand was becoming very weak, and that there was a tremor at every voluntary motion. A month before admission her gait became difficult, and the right limb seemed weak and useless. For the past two months she has had a difficulty in speech; her utterance being hesitating and indistinct. She has never had convulsions. On examination it has been found that both eyelids droop, the left more than the right. The child is unable to open her eyes, and is obliged to lift up her head in order to bring an object into the level of vision. The right eye is in the normal position, looking straight forward, but the left deviates outward to the extent of 25 degrees. There is a paresis of the lateral muscles of the orbit, and the slight lateral motions of which the eyeball is still capable are accompanied by nystagmus. The vertical movements of the eyeballs are completely paralyzed. The left pupil is somewhat more dilated than the right. The pupil reflex is normal on both sides. There is no diplopia and no dyschromatopsy. On examination of the fundus oculi, he found a slight neuritis of the optic nerve, especially on the right side. The face is asymmetric, and the right side paralyzed. The child cannot whistle, and cannot talk. The tongue slightly deviates to the right side. When the child eats, the food is not propelled into the pharynx by the tongue, but remains between the cheeks and the gums, and sometimes falls out of the mouth. Her speech is very slow, dragging. There is no aphasia, but many syllables are pronounced with great difficulty. The lips are normal, and there is no alteration in the voice. There is a distinct paresis of the right upper extremity, and the gait is swaying and uncertain. She drags the right foot, and can hardly walk without support. The patellar tendon reflex is somewnat exaggerated on the right side, the plantar reflex seems to be absent on the right side, and normal on the left. The muscles of the right lower extremity are somewhat atrophied. The skin is thickened all over the body, and gives the sensation of edema. There is no disturbance of sensation in any part of the body, except that the hearing seems to be poor, and that taste and smell seem to be defective. The general condition is good. The seat of the lesion in this case is in the left oculo-motor center, involving to some extent the right. The left pyramidal tract is also affected, being adjacent to the oculomotor center, and this explains the right hemiplegia. The swaying gait is explained by the proximity of the middle and superior cerebellar peduncles. The glossoplegia is due to the fact that the lesion has descended to the medulla, and has involved the hypoglossal nerve nucleus, The diagnosis is therefore progressive ophthalmoplegia of nuclear origin, which after hav-

ing involved the left pyramidal tract and the middle and superior cerebellar peduncles, is now advancing towards the medulla. The child died of bulbar palsy, and the autopsy showed that the lesion was tuberculous, and situated exactly as described above.

3. **Intubation and Tracheotomy in Other Diseases than Croup in Children and Adults.**—By ANTOINE SARGNON. (*Thesis*, Lyons, 1900.) The writer gives a history of intubation, and an elaborate description of the technique of both intubation and tracheotomy. The author has modified Lefferts' tube in such a manner that the lower swelling is situated below the cricoid. He has also enlarged the diameter of the tube by one millimeter at this point. Thus he expects to avoid the danger of spontaneous extubation. In children he prefers the digital method of extubation, which he studies at length. The concluding chapters of the thesis are devoted to the subject of intubation and tracheotomy in adults. The author thinks that the rule should be to employ intubation for all forms of laryngeal stenosis where the lesion is situated high enough, and to use tracheotomy in the cases, where the lesion is too low down in the trachea to be reached by intubation. In traumatism, in edema of the larynx, in syphilis, cancer, and tuberculosis of the larynx, in new growths of the larynx, and in tumors of the thyroid gland, the procedure of choice must be intubation, but in incurable stenosis tracheotomy must be resorted to. The author gives in detail the technique of intubation in adults.

4. **State Care of Infants in Eure-et-Loir During the Year 1899.**—By E. BARTHÉS. In this article the author describes what has been accomplished by the system of state care for infants in one of the departments of France during the past year. This system is now in operation throughout France, and consists of providing indigent orphans and illegitimate children with homes in the country under the care of farmer's wives, etc. There are medical inspectors for each district who see that the children are taken care of properly, as far as this is possible. The author gives a series of statistical tables, and suggests a number of reforms dictated by experience. The department of Eure-et-Loir contains 5,000 infants thus taken care of by the State. The majority of these come from Paris and the department of the Seine. The ages range from one day to two years.

DER KINDERARZT, MARCH, 1900.

1. **Constipation in Infancy Due to Fissure of the Anus.**—By A. KÖPPEN. Faulty diet is not the only cause of constipation in infants. Although the quality of the milk or other food must be looked after in cases of habitual constipation in infants, whether fed at the breast or artificially, yet the physician should never neglect to inspect the anus of these patients, as slight fissures in this region may be the principal cause of the trouble. Mothers, generally, do not realize the danger of habitual constipation in their infants, and are rather pleased that their stools are hard, having heard so much of the dangers of diarrhea. Thus a child that has had normal stools all along, becomes constipated at some time or another, an

occurrence which is possible with the most careful feeding, and is very frequent under ordinary conditions of over-feeding, both in breast-fed and bottle-fed babies. The result of this acute attack of constipation, and still more, of subsequent attacks, is a tear in the delicate mucous lining of the lower bowel. This tear is usually situated at the junction of the skin and the mucous membrane of the anus, but it may be so extensive as to reach outward into the skin, and inward into the rectum. The lower portion of the large intestine in infants differs in its anatomic features from the adult rectum. While in the latter, the lower portion of the rectum is distended in the shape of an ampulla, which practically serves as a reservoir for feces, somewhat as the bladder serves for urine, in the child the rectum is straight, and has no ampulla. Thus the feces of an infant collect immediately above the anus, and not a few centimeters above it, as in the adult. The irritation produced by the pressure of the collecting feces upon the sensitive fissured anus causes the sphincter to contract, and thus impedes the passage of the intestinal contents. The feces thus imprisoned become hard, and habitual constipation results from a repetition of the process. The child suffers severe pain before and during defecation, and by each act the fissure is enlarged more and more, and its healing prevented. Here modification of the diet will be of little avail, although in very mild cases it may help, in conjunction with other treatment. Purgatives, massage, etc., will also be of little use in cases. The only efficient measures consist in local treatment of the fissure. The writer uses applications of ichthyol, which he paints on the fissure with a camel's hair brush. This treatment suffices in cases where the trouble is not of very long standing. If the fissure is very large and the constipation very marked, however, the former will not heal in spite of the ichthyol, and each movement will spoil the effect of the application. In such cases, he uses injections of olive oil. From 10 to 20 cc. is injected into the rectum daily. If the oil is not rancid, it will not irritate the mucosa, and will act as a protective covering on the fissured surface. The fissure is thus allowed to heal, and the pain becomes less. The consequence is that the spasmodic contraction of the sphincter is relaxed, and the tendency to constipation removed. The after-treatment may be continued with ichthyol. In introducing the rectal tip, it is necessary to exercise the utmost caution. The tip must be previously oiled, and it is best made flattened at the sides, inasmuch as the anus is an antero-posterior slit, rather than a round opening. The tube also must be curved to correspond with the direction of the lower bowel. The rectal tube should be of hard rubber, and be connected to a glass syringe of proper capacity.

2. **An Interesting Case of Fetal Rickets.**—By FEDOR SCHMEY. The writer was called to attend a woman aged 27, primipara, whose labor had been delayed. On examination he found the head in the second vertex position. The sutures and fontanelles could not be distinctly felt however. The head would come to the floor of the pelvis at each pain, but receded again after the pain was over. As there was no progress for an hour, the forceps were applied, and the child delivered, It was perfectly well formed, except that the head presented a number of peculiar features. All the sutures of the skull were widely gaping, and pulsation

could be distinctly felt through them. On the left side of the sagittal suture there was a triangular island of bone,—a "Wormian bone," separated from the other bones of the cranium by broad suture. A second Wormian bone was situated at the right side of the apex of the occipital bone, and was not an island, but a bony peninsula, one side of which was bounded by the lambdoid suture, two other sides by sutures that are present in fetal life, and the fourth was already ossified. A third Wormian bone was situated on the other side of the apex of the occipital bone, was also a peninsula, and was perfectly analogous to the second. These last two bones undoubtedly represent the *os incæ*, a bone of considerable embryological and anthropological interest. The name comes from the fact that it was found very frequently in the skulls of ancient Peruvians. It constitutes one of the osseous islands, from which the occipital bone develops. There is no doubt that the case was one of fetal rickets, although no cause could be found in the heredity of the child.

OPERATION FOR ADENOIDS IN A BLEEDER—DEATH FROM HEMORRHAGE.

Sachs, in the *Journal of Laryngology, Rhinology, and Otology* reports the case of a boy who was subject to hemophilia, and in whom the removal of the pharyngeal tonsil was followed in a few hours by profuse hemorrhage of the nose. In spite of every known measure the bleeding did not cease, and the boy died on the fourth day after the operation. In commenting upon the case, the writer says that more caution should be exercised in performing this so-called minor operation, and that the patient should be put to bed immediately after the adenoidectomy.

A REVIEW OF MILK FOODS IN RELATION TO THE HYGIENIC LIFE AND GROWTH OF INFANTS AND CHILDREN WITH REMARKS.

J. J. Caldwell writes an article under this title in the *Medical Times and Register*, February, 1900. He describes the chemical and physical properties of milk, and discusses its value as a food in both children and adults. He compares human milk to cow's milk and reports some cases in which he has used various infant foods when substitution of artificial feeding was necessary.

PEDIATRICS

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VOL. X. AUGUST 1st, 1900. No. 3

ORIGINAL ARTICLES

ACUTE DILATATION OF THE HEART IN INFLUENZA OF CHILDREN.*

By F. FORCHHEIMER, M.D.

ACUTE dilatation of the heart has been observed in a number of infectious diseases, either as a result of direct or indirect affection of the heart.

As direct affection of the heart may be considered those forms in which dilatation, and as a result myocardial insufficiency, is produced by primary disease or abnormal functional activity of the myocardium itself.

As indirect affection those forms may be considered in which the dilation is the result of functional or diseased conditions of all those apparatuses which have, in one way or the other, a direct influence upon the heart's activity,—the respiratory apparatus, the nervous system, the blood-vessels, the kidneys.

Under the first heading, then, we can take into consideration diseased conditions of the myocardium, its muscular or connective-tissue substance; and therefore, to a greater or less extent, the intracardiac nerve supply.

Under the second heading must be included the consideration especially of those conditions tending directly to change the intracardiac pressure, as the result of increased resistance to the outflow of blood from the heart; and the changes that take place in the cardiac centres, and the extracardiac nerves.

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* Reprinted from the Festschrift in honor of Dr. A. Jacobi, by courtesy of the Editors.

When the dilatation of the heart goes beyond certain limits, then we have produced symptoms of myocardial insufficiency. The appearance of these symptoms varies in individuals; and it is difficult in an individual case to state when the line of demarcation, as between physiologic and pathologic dilatation, has been passed. It has been my observation that children in most instances will recover from that which seems a pathologic dilatation with increased rapidity, in that respect differing greatly from the adult; again, this is largely a question of individuality, as we find some children who not only seem predisposed to this condition, but in whom not only all the symptoms of myocardial insufficiency develop as completely as in the adult, but also continue to do so upon comparatively slight provocation. While this is the case, yet the prognosis differs in the two periods of life, in that, once the great storm of symptoms has passed over, the child's heart recovers itself more quickly, and develops into what seems a normal heart; at least without compensatory hypertrophy, while in the adult compensatory hypertrophy is the rule.

The clinical picture produced by acute dilatation of the heart in influenza has been known to nearly all the authors who have written upon the subject of influenza during the last twenty years. But it was left to Huchard (1890) to give a special name to this condition, "la grippe cardiaque." For myself I have always believed that terms like renal typhoid or cardiac grippe are of no special benefit to us, in that, after all, in these conditions it is only a local manifestation of a general affection that we are dealing with; a fact that should be thoroughly appreciated and fully recognized at all times. For this reason, I have preferred the title "Acute Dilatation of the Heart," as it at least expresses the definite condition that is always present; one that we find in septicemias of all varieties, in the acute exanthemata, in whooping cough, diphtheria, influenza,—in short in nearly all the acute infectious diseases, either as a result of the specific primary infection, or as the result of secondary infections which we are so apt to find in all these conditions. To the great Dublin clinician, Graves, is probably due the credit of having made a distinct clinical picture of the characteristic conditions which I am about to consider (*Clinical Lectures on the Practice of Medicine*, 1843, "Influenza.") He says: "One of the most singular features of influenza is the extraordinary degree of dyspnœa witnessed . . . and even in many cases when the bronchial mucous membrane is but slightly engaged, the amount of dyspnœa is remarkably great; . . . in many cases it is intermittent, or at least undergoes remarkable exacerbations, and remissions at certain hours of the day and night. . . . It would appear that the respiratory derangement depends on the same general cause which produces the whole line of symptoms; and that it might exist even when there is no bronchial inflammation at all." This same condition is referred to with more or less detail by the German authors, Biermer, Zulzer and Korrmann; but it is to West (*Lectures on the Diseases of Infancy and Childhood*, Phila., 1874, p. 281), that we owe a description of a more intense development of this train of symptoms. In the epidemic of 1856 West observed a combination of symptoms of which dyspnea was the principal one, disappearing in two or three days, followed by "extreme depression, cool moist skin, a very feeble pulse and labored respiration. . . . In this condition, the children, though quite conscious when roused, lay generally dozing, while, though the somewhat livid hue of the lips and surface seemed to imply the existence of some serious mischief in the lungs, there was nothing to be heard but a large, moist râle." He concludes by stating that "on several occasions," under increased depression, a fatal issue followed.

In this country we are now in the tenth year of successive epidemics of influenza; and the opportunity for study of the various manifestations and complications, both in private as well as in hospital practice, has been exceptionally favorable, on account of the number of cases, and the differing course of the disease in different epidemics. As a result many of us have seen the conditions above described not infrequently. An infant or child is taken down in the course of a house epidemic of influenza, with high fever accompanied by symptoms on the part of the respiratory or alimentary tract, possibly with a catarrhal or follicular angina tonsillarum, and within 12 to 24 hours there develops dyspnea, or better tachypnea, for it is perhaps more correct to refer to the condition of rapid breathing in this form of the affection as tachypnea, as all other evidences of dyspnea are wanting, such as cyanosis and movements of the respiratory muscles. The child lies in bed with congested skin, sleeps a great deal, yet is easily roused; the tachypnea is represented by rapid breathing (60 or 70, or more per minute), without disturbance between the normal relation of inspiration and expiration, therefore neither inspiratory or expiratory dyspnea. In some cases the breathing is not very much more rapid than the normal. The pulse is very rapid, depending upon the age of the patient, frequently intermittent, but otherwise normal. Physical examination of the chest reveals nothing, or possibly evidences of a bronchitis in the large tubes; the heart dulness is always found broadened, with no *bruits* as a symptom of this condition, although in one instance I found an endocarditis developing after the acute dilatation had run its course. The urine, which was examined in every instance, was invariably found to contain no albumin. In the course of from 24 to 72 hours, all these symptoms disappear, the temperature, pulse, heart and respiration become normal, the whole condition of the child changes, it returns to its normal state, and then remains well; or the various symptoms of a more prolonged attack of influenza develop. I have never seen this mild form develop into the more severe one, as seen by West; all my severe cases have developed in a different way, as will be seen presently.

As to the etiology of this condition, varying views have been expressed. Graves believes that the poison of the influenza "acts on the nervous system in general, and on the pulmonary nerves in particular," and that the condition produced is one to be likened to the one following section of "the eighth pair of nerves" in animals. Briemer (*Virchow's Handbuch*, V., Vol. vi) thinks that the symptoms are due to a pulmonary congestion; Zulzer (*Ziemssen's Handbuch,* LI, Bd. iii) looks upon the condition as one akin to nervous asthma, more like a motor neurosis of the diaphragm and the bronchial muscles; Sansom (*Medico-Chirurgical Transactions*, 1894, p. 290) says that "the cardiac crisis during the acute stage of the disease might be due to the involvement of nerve elements in the bulb; the remote symptoms should be ascribed to a neuritis affecting the sympathetic ganglia, the vagus, and the sensorimotor nerve trunks."

Against the acceptance of the congestion of the lungs as the cause of these symptoms speaks the fact that there are no physical evidences in the lungs which show the existence of this rather indefinite condition. These might have eluded detection on the part of one or more observers, but all those who have seen these symptoms remark upon the disproportion between physical signs in the lungs and the rapidity of breathing. It seems more satisfactory, therefore, to accept a nervous origin for these symptoms, although there is no direct evidence in favor of this view.

Merklen and others, it is true, have found lesions in the vagus in cases of tachycardia; but we have here a condition producing especially tachypnea. Myocarditis can be excluded on account of the transitory nature of the affection, although in the grave forms of dilatation this has been observed (Huchard). Neither does it seem possible that the cardiac branches alone are affected, otherwise the tachycardia would be the prominent symptom, while this is only relative, and the tachypnea the dominant symptom. It is therefore more reasonable to suppose, with Sansom, that there is some affection of the bulb affecting both the respiratory and cardiac accelerating centers. The source of the irritation would be a toxin, hypothetical as far as the influenza bacillus is concerned, but positive as to some of the pus producers which habitually accompany influenza. It would be fully in accord with the nervous origin of these symptoms that we find broadening of the heart's dulness. The production of acute dilatation of the heart as a result of a disturbance of innervation, has been conclusively proved in many diseases. The second class of cases to be described demonstrates this more fully.

The grave form of the affection presents an entirely different clinical picture. Here there can be no question as to the origin of symptoms, at least, as all the manifestations can be satisfactorily explained by considering the heart.

Huchard, "Sur quelques formes cliniques de la grippe infectieuse," *Bulletins et Memoires de la Societé médicale des Hôpitaux de Paris*, S, 3, Vol. vii, p. 93, 1890) gives the following concise description of this condition (La grippe cardiaque): "The attack manifests itself by syncope and faintness, which may become fatal; by slow pulse, arhythmia or intermittence, by grave symptoms of cardiac collapse and sometimes by pains resembling angina pectoris." One of his patients had a very rapid pulse, with a feeling of suffocation upon the slightest movement. How this form of acute dilatation of the heart presents itself in children will be best shown by the following histories of two of the four cases I have seen.

The first was a girl of 12 years of age, weighing about 130 pounds, who previously had the rickets, diphtheria, typhoid fever, pertussis and measles, from all of which she had recovered without any sequelæ. The family history was good. The child was taken sick with fever and sore throat on March 6, 1897, from which she recovered in a few days, and this attack left her with a cough, which continued until I was called in to see her again, on June 5, 1897. This cough, which I did not hear before the latter date, but heard too often afterwards, was the cough that we so frequently hear in influenza, and which has, not inaptly, been called "pertussoid." On the morning of June 5, 1897, the child had fever (101°), and the cough, as far as number and intensity of paroxysms were concerned, had grown very much worse. In the evening the temperature had risen to 105°, with pulse and respiration in proportion; the cough was now so bad that with each paroxysm the child complained of pains about the lower region of the thorax and abdomen.

Physical examination revealed the evidences of a bronchitis, large, moist and dry râles, and a large superficial heart dulness almost to the right border of the sternum, and to the mammary line to the left, the latter to be explained possibly by the obesity of the child. No evidences of consolidation in the lungs, nor were there any abnormal auscultatory phenomena to be found in the heart. The next few days passed in the same way, the temperature, pulse, and respiration keeping up, the cough becoming worse, and vomiting taking place with nearly every paroxysm of coughing. As a result of this constant coughing, the abdominal pains became so great, constipation and vomiting being present, that a suspicion of abdominal inflammation arose, which, however, was soon dispelled; in other words, the child was now suffering from recrudescence of the influenza.

On the morning of June 9th I was suddenly called to see the child and found her in the following condition: She was in a state of collapse; she was lying in bed in a soporific condition, from which she was easily roused; the skin moist, slightly cyanosed; the face swollen, breathing at the rate of 65 per minute without any effort apparently; the pulse had come down from 120 beats to 70 per minute, and was weak and intermittent. The slightest effort on her part, such as turning in bed, caused the frequency of respiration to be increased and the pulse to become more irregular and weak. After an attack of coughing the pulse became almost imperceptible, and the breathing ran up as high as 70 per minute. A thorough physical examination was not to be thought of on account of this condition; but auscultation of the heart showed nothing abnormal; while percussion, even in the recumbent position, showed the right border of the heart about half a centimeter to the right of the sternum. After two days the condition changed somewhat; large doses of codeine were added to the medication, as it seemed imperative to control the paroxysms as much as possible on account of their untoward effects upon the heart. Now the pulse gradually began to increase in frequency, going up to 140 beats per minute; the dyspnea was not so constant, there being a difference of between 15 and 20 respirations during the condition of being awake or asleep; but motion, swallowing, or any excitement would make the difference disappear and an attack of coughing would raise the number of respirations even higher than it was before (as high as 90 per minute). The pulse continued rapid all this time, never going below 120 beats per minute, and continued intermittent, although not quite so weak as on the previous days.

Physical examination of the lungs did not reveal anything more than at first, but the heart showed remarkable changes. The superficial dulness was increased to 1 cm. to the right of the sternum; and after attacks to as much as 2 cm., depending upon the intensity of the paroxysms; no appreciable change to the left. Over the tricuspid area, as well as at the apex, was heard a soft systolic *bruit*, which also was increased in intensity after paroxysms of coughing. *Bruits* were also heard at the base, especially after the paroxysms of coughing, but they were more difficult to localize, and were conducted in such a way that it was impossible to ascribe them to one valve or another. Gradually, as a result of treatment, all these symptoms began to disappear; the pulse came down from this time until September, 1897, so that its minimum was 87 and its maximum 120 beats per minute; the latter upon exertion. As soon as it was possible, graded exercises were used, and the patient was discharged as well in the middle of December, having been ill for five months, with diurnal changes, for better or worse, but on the whole with a constant tendency toward improvement. On May 7, 1899, I examined the patient for the last time. I then found her having lost her fat, having grown four inches, and with a normal heart, which was no longer insufficient under any conditions of exercise or fatigue.

One other case did not materially differ from the preceding, except that the manifestations were not so severe and did not last so long. In addition, this last child was younger and not so fat, so that the contributing cause of obesity of the heart was absent in her. In the former case there were some peculiarities which must be taken into consideration. The child was unusually fat for her age; it is, therefore, not unlikely that there was some obesity of the heart, rendering the myocardium less resistant to strain than it would have otherwise been] Three months of continued coughing certainly did not add to the strength of the myocardium, so that when a renewed invasion of influenza occurred, cardiac collapse ensued, which first manifested itself by great asystole, and afterwards by a decided and distinct dilatation of the right heart, with relative tricuspid insufficiency.

It is difficult to decide upon the real condition which first caused this cardiac collapse; but it was my distinct impression at the time of first seeing the patient that I had to deal with an uncomplicated case of myocardiac insufficiency, the result of heart strain, the factors producing the heart strain being the obesity and the whooping-cough-like paroxysms of coughing. It is outside the province of this paper to discuss the rôle played by the influenza in producing the pertussoid; the mechanism of production of heart dilatation in this case was the same as that found in whooping-cough, to which so many authors have called attention. That the toxin had something to do with the improper innervation of the heart, it is impossible to deny, but just as impossible to affirm.

The following case again illustrates peculiarities, but seems to prove especially that the myocardium is the part of the heart that is affected. The patient, a little boy, two years and three months old, of good antecedents, artificially fed as an infant, had had influenza when four months old, followed by acute otitis media; in October, 1897, when fifteen months old, he had another attack of influenza, which was followed by the peculiar and irregular fever which is so common after this disease, which lasted for two months, and which resulted in great depression, anemia and loss of flesh (no malaria, no typhoid). In June, 1898, he contracted whooping-cough, which ran its course in a very mild manner (maximum, ten paroxysms in twenty-four hours).

In October, 1898, he had another attack of influenza; as the little fellow had three attacks of influenza, the fact must be emphasized that, in every instance, all the members of the family were affected with one or the other form of the disease, so that the diagnosis was perfectly clear. In this last attack the pertussoid nature of the cough was perfectly demonstrable, as would have been the case, in all possibility, with any cough which would have developed so soon after whooping-cough. Early one morning, after an unusually severe attack of coughing, "he turned blue in the face and fell fainting in my arms," as the mother expressed it. Two hours after this I saw him, and found him cyanosed, sweating, breathing very rapidly, and with a rapid, irregular and weak pulse. Physical examination of the lungs showed the evidences of bronchitis. Inspection of the cardiac region showed pulsation over the whole area; in addition there was epigastric pulsation. The heart impulse was diffuse, felt most distinctly in the fourth interspace to the left of the mammary line; percussion verified this at the left border of the heart. Toward the right the dulness extended to one half cm. beyond the right border of the sternum, and above began at the fourth rib. There was no *bruit*. The tachypnea was influenced by the slightest exertion, but the heart did not increase materially in size. The patient was kept in bed and under treatment for five weeks, and then made what seemed from physical evidence, a rapid recovery. During the summer he had another attack of tachypnea, which, however, lasted only a few days. When brought back to me in the fall there was no evidence of cardiac trouble. The following winter (1898-99) was uneventful, but the mother, preparatory to leaving for the summer, in June, 1899, asked me to examine the child again, which I did, and found the heart normal. The fatigue of a very hot journey and an attack of illness, accompanied by fever and gastrointestinal symptoms, again brought on the same train of symptoms described above, the latter being diagnosticated by the local physician as due to heart trouble. The attack lasted for two weeks. My notes made on September 2, 1899, show the following as the condition of the heart: Apex beat immediately below the nipple in the fifth interspace; superficial dullness begins at the apex, the lower border of the fourth rib, and the left border of the sternum. No bruit. Since the last attack, the child has been well. The peculiarities of this case are: that the myocardium undoubtedly was weakened by the previous attack of whooping-cough, although no evidence of this weakness could be detected, and that this weakness has continued, so that when sufficient demand is made upon the myocardium, high fever with gastrointestinal infection, for instance, the same symptoms return. On account of the long periods of rest which the child has enjoyed, it does not seem reasonable to suppose that the nervous system of the heart, except as implied in the myocardial structure, plays any important rôle in the production of these symptoms. Again, at no time during the course of the disease was there bradycardia. It seems that, here again, we are dealing with a purely mechanical dilatation of the heart, due to increased resistance to the outflow of blood.

Convulsions in Children.—

Hot or tepid bath or mustard bath if the child seems to have been chilled. To prevent recurrence give:

℞	Potass. brom.		
	Sodii brom.,		
	Ammon. brom āā	0.20	cgm.
	Syr. codein	5.	gm.
	Syr. auranti flor.	30.	"
	Aquæ	100.	"

Medical Record, June 2, 1900.

CAUSATION AND RELATIVE FREQUENCY OF TYPHLITIS, PERITYPHLITIS AND APPENDICITIS IN INFANCY AND CHILDHOOD.*

By Joseph Henry Byrne, M.D.,
New York.

Visiting Surgeon Metropolitan Hospital and Dispensary.

THE weight of evidence is so great that it must now be apparent to all that inflammation of the cecum takes little or no part in the production of appendicitis; that few cases of typhlitis exist as a primary disease; and that perityphlitis only occurs as a secondary complication. The cecal theory is now a thing of the past, as all clinical and pathologic evidence is opposed to it. Renvers in 586 autopsies after perityphlitis found the appendix ruptured in 497 cases. Agar in 218 similar cases found the cecum ruptured only 29 times, but does not state whether this took place from without inward or in the opposite direction. It is well known that inflammation of the large and small bowel has little or no tendency to involve the peritoneum and that the opposite is the rule with an inflamed appendix. With this in mind it is easy to understand how the inflammatory process can extend to the serous coat of the neighboring parts and the adjacent connective tissue. As careful an observer as Talamon states that early operations seldom or never show the cecum involved (by inflammation or perforation), but admits that it may become the seat of trouble secondary to disease of the appendix, this statement including cases of tuberculosis, dysentery and typhoid. Stercoral accumulation in the cecum may occasionally produce a mild inflammation but never gives rise to ulceration and easily disappears upon the administration of purgatives.

The inner coat of the gastrointestinal tract is frequently the seat of varying degrees of inflammation in infancy and childhood, and more especially during the warmer months.

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* Abstract of a paper presented to the American Medical Association, Atlantic City, N. J., June 6, 1900.

Therefore if these ordinary inflammatory processes took a prominent part in the production of appendicitis, this disease would be more frequently met during the summer season, but such is not the case. Statistics prove beyond question that this trouble is rather infrequent before the fourth year, increasing between that and the tenth, and that the majority occur between this and the thirtieth year. I have yet to see in my fifteen years' experience a case of primary typhlitis or perityphlitis, and as the literature of recent years shows the experience of others to be somewhat similar, my paper therefore resolves itself into one on appendicitis.

The appendix varies more in size, position and general make-up than all the other structures of the human anatomy. In the early periods of life it is very rich in lymphoid tissue, and has been styled the tonsil of the intestines. The size bears no relation to the frequency of the disease. The organ being a functionless and rudimentary one, with a blood supply that can easily be interfered with, and that, under healthful conditions seems barely sufficient, it must be more or less susceptible, on account of the low degree of vitality, to inflammatory disturbances. The physiologist assigns to it no special function or even an indirect part in our vital economy.

The credit for our present knowledge is due to the excellent work of Weir and McBurney, of New York, Fitz, of Boston, and Hodenpyl of this city, who, by the way, was the first to suggest that the bacillus coli communis plays an important part in the production of the disease.

Etiology.—The presence of foreign bodies is now looked upon as a minor factor in producing appendicitis, but when they do exist they act like concretions in a mechanical way.

When the mesentery is long the appendix is likely to assume a position that is almost straight, but when the former is incomplete the appendix may become curved or twisted, thus interfering with the circulation and also with the free drainage of the normal secretion, preventing the egress of any fecal matter that might enter and favoring the formation of concretions. The appendix is not at all exclusive in the choice of position and in about 60 per cent of the cases the site selected facilitates free drainage, but when the position is a pendant one the ingress of matter is aided while the egress is hampered, thus inviting the formation of concretions. The cavity of the appendix and the opening into the cecum often predispose to inflammation; previous attacks of disease or retrograde metamorphosis result in a narrowing of the outlet or the production of one or more strictures of the lumen. Strictures are very infrequent between the first and the fifteenth years, and the question as to whether these lesions are pathologic or the natural consequence of retrograde changes is not yet satisfactorily decided. They have been found a number of times in the fetus and also in the new-born.

Relatively the appendix is larger in fetal life, infancy and childhood than it is in the adult, and compares to the large bowel as 1-10, while in the latter it is as 1-20. It is also somewhat longer and wider in the male than in the female and this holds good in early life. It reaches its maximum size between the tenth and twentieth years, and from here on it remains at a standstill or diminishes. This diminishing ratio is nothing more than a physiologic or pathologic retrogression, and with it goes a decreasing vascularity. As the tissues receive their nourishment through the blood, I am firmly convinced that the slight immunity that exists in early life can be credited to the fact that these changes in the majority of cases are not sufficient to interfere with the integrity of the part until after the fifteenth year. Statistics support this assumption, as only 15 per cent. of all cases of appendicitis occur prior to the fifteenth year. The female, both young and old, is less frequently the victim of appendicitis than the male. The comparatively smaller size of the organ with its increased vascularity (an anastomotic branch being given off from the region of the right ovary) accounts for this slight immunity.

One attack of appendicitis predisposes to subsequent inflammation, and this may be brought about either by a constriction, adhesive bands, the presence of a concretion or interference with the circulation. Constipation or diarrhea, if at all, are only minor etiologic factors. If, as Maicaigne states, the bacillus coli communis of diarrheal discharges is much more virulent than that found in the healthy bowel, diarrhea may then become a more active agent. Any inflammatory state in this region may at times result in an appendicitis.

In early life the mucous membrane of the appendix possesses wonderful powers of absorption, and this in itself may become an active predisposing cause.

Exposure is a possible element in the causation of the disease. Several instances have been recorded, but none during infancy or childhood so far as I have observed.

Typhoid and tubercular ulcers of the appendix are met post mortem, but are seldom seen after operation. When the solitary glands of this organ are involved during an attack of the former disease, the process of healing may result in the formation of a constriction.

Microorganisms are now looked upon as being active exciting agents, and the bacillus coli communis is the germ most frequently found. Hodenpyl notes its presence in 34 out of 35 cases; Hawkins in 57 out of 61, and others give like experience. They may act independently, but their invasion is usually secondary to some existing condition. Welsh states that the bacillus coli communis is innocent if the integrity of the mucous membrane is maintained, but becomes pathogenic when the same is inflamed or injured. Hodenpyl, however, found numerous bacilli in the walls of the appendix without any lesion of the membrane.

Traumatism as a cause of appendicitis may be of two kinds, direct and indirect. Instances of the former are matters of record, and while it is possible for indirect violence to become an etiologic factor, I feel positive that the appendix is already in a receptive state, and therefore while the injury may seem to be the active agent, it is only a minor factor in the causation of the trouble.

Foreign bodies and concretions when they exist no doubt play an important rôle. The former may become a nucleus for the latter, but they both occur less frequently than was formerly supposed. When they do exist they act as irritants to the mucous membrane, producing a catarrhal inflammation and facilitating the invasion by microorganisms, and secondly by mechanical interference; occluding the lumen, acting as a ball valve at the opening itself, or the seat of stricture, obstructing the circulation even so far as to produce gangrene, and finally by pressure.

In the following case I practised expression of a concretion by digital manipulation:

On April 15, 1900, I was called to see a boy of 10 years who had been suffering from constipation for five or six days. Two days prior to my visit, on forcing a movement, he was taken with pain about the umbilicus which continued at irregular intervals. On the morning of the 15th he was seized with severe vomiting, the pain increasing so as to produce syncope. When I saw him he was on his side with the thighs flexed, and stated that this was the most comfortable position. His temperature was 101°, pulse 114; he complained of continuous pain with frequent severe spasmodic seizures which caused him to cry out. The abdominal wall was exceedingly thin; muscular resistance not marked. I was therefore able to make out the appendix with comparative ease, and found it in a state of erection and in a somewhat unusual location, directed upward and outward toward the crest of ilium. The appendix I judged to be about 3 inches long, and about 1 inch from its distal end I discovered a small but hardened fecal mass which I pressed toward the gut. On the following day his condition was about the same, but I was unable to make out the appendix owing to muscular resistance. I suggested operation, but the father preferred waiting till the following morning, when to my surprise the boy had greatly improved; temperature normal, pulse 84. No pain; tenderness greatly diminished. The appendix could be felt, but the coneretion was no longer in evidence. He complained of extreme hunger, and stated that he was entirely well; the case passed out of my hands on the 19th, as the parents considered a recurrence the main indication for an operation.

The expression of hardened fecal masses by digital manipulation to my knowledge has never before been referred to, and although the cases in which this mode of procedure would be applicable must necessarily be few, I could not refrain from directing attention to the manner in which this very satisfactory result was accomplished.

A CASE OF CONGENITAL DISLOCATION OF THE WRIST.*

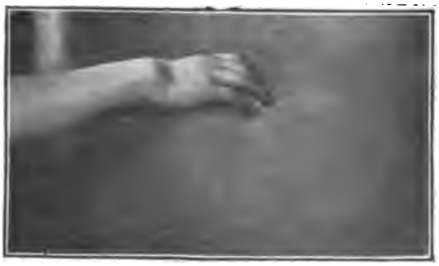
By **Philip Hoffmann, M.D.,**
St. Louis, Mo.

Member of the American Orthopedic Association; Chief of the Orthopedic Clinic (Polyclinic) Medical Department, Washington University, etc.

THE writer has reason to believe that the condition herein reported is a very rare one. Congenital dislocation of the wrist, uncommon in itself, is almost invariably associated with club-hand and bone deficiency. In the literature at my command, I could not find the report of an uncomplicated case of congenital wrist displacement such as described below.

The child, a male, came under my observation one or two days after birth. The right carpus was displaced forward, but the ligaments, which were lax and unstable, allowed easy though but temporary reduction to the normal. There was no evidence of traumatism. The bones were normally developed.

The opposite upper extremity presented a condition of club-hand, with deficiency of the lower half of the ulna and inward deviation of the hand. The right femur was ¼ inch shorter than its fellow.



I present only the photograph of the simple wrist displacement, as it is to this that I wish to call particular attention.

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* Read before the American Orthopedic Association, at Washington, D.C., May 2, 1900.

The only treatment given was corrective manipulation by the nurse, which, however, was but carelessly and imperfectly performed.

The child is now over 2 years of age. The displacement, which is still present, can be temporarily reduced, though not with the same facility as at first; nevertheless, the child has good use of the hand.

NOTE.—In discussing the case, Dr. Gibney, of New York, presented a gentleman of middle-age, one of whose wrists had been similarly affected from birth.

705 North Channing Avenue.

Grippe in Children.—

℞	Tinct. aconiti	gtt. v–x
	Sodii benzoat	1–3 gm.
	Syr. lactucarii	5–10 gm.
	Syr. aurant. flor	20 gm.
	Mucil acac.	120 gm.

M. S. Dessertspoonful every two hours.

—PERIER, *Medical Record*, June 2, 1900.

Rhus Poisoning.—

The following lotion is highly recommended for rhus poisoning:

℞	Sodium sulfite	1 dram.
	Glycerin	½ ounce.
	Camphor water to make 4 ounces.	

Philadelphia Medical Journal, June 23, 1900.

ONE MORE CASE OF APYRETIC MEMBRANOUS CROUP.

By A. E. Cordes, M.D., Paris, M.R.C.P., London;
Geneva, Switzerland,

On January 14, 1899, I was called to see S. S., aged 5 years, convalescent from measles.[*] She had been eating too much heavy food, and was well after a dose of castor oil. On January 17th, at 6 p.m., I was called hurriedly to her and found her suffering from sore throat. There was aphonia, and a bit of membrane was seen on the right side of the pharynx. I went to obtain Roux's serum, and called Dr. Audioud, who agreed with my diagnosis, and injected at once 20 cc. of the serum. The aphonia was more marked when the child struggled during the examination of the pharynx. The temperature was 38° C. (100.4° F.). At 8:15 p.m. the child became more quiet.

On the next day, January 18th, I saw her at 10 a.m. She had passed a quiet night. The "tirage," i.e., the depression of the intercostal spaces during inspiration continued. She had not passed any urine nor feces, but expectorated some thick mucus. A second injection of 10 cubic cm. of Roux's serum was administered.[†]

At 2 p.m. on the same day I was called again in a hurry. The child had a bad attack of dyspnea. I went at once and found her quiet. The temperature remained the same. I sent her to to the Hôpital des Enfants Malades, where tracheotomy was performed at about 4 p.m. on the same day. The temperature after the operation was 37.6° C.

On the following day, January 19th, the temperature was the same. All went well until the canula was taken out about a week later.

The special interest of this case is that the temperature never exceeded 38.5° C. (101.3° F). No injection was made after the operation.

12 Rue Bellot, Geneva, Switzerland.

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[*] Eruption appeared on December 4, 1898.

[†] See PEDIATRICS, 1896, p. 350.

EDITORIAL COMMENTS.

Opium in Infancy

A thoughtful and valuable paper on this subject, based upon well-seasoned experience, appeared in the *Journal of thc American Medical Association* for May 19, 1900. The author, Dr. T. D. Crothers, of Hartford, Conn., thinks that the real danger of opium in infancy has only recently been recognized. It must, at all events, be conceded that our best textbooks on the principles of therapeutics have warned us much more against the danger of large doses than against the much greater dangers of arrest of development or precipitation of true degenerative change in the infant brain. Dr. Crothers believes that opium, even in the smallest dosage, continued for any length of time, will be disastrous. "Opium seems to have two distinct effects upon the nervous organism of infancy. Its sedative action is of the nature of palsy. Cell-functions and growth are slowed up, retarded, and finally changed." The changes following long-continued doses become permanent. The temporary symptoms of stupor and dulness persist as imbecility and mental perversion in later life." He cites some striking instances of patients whose passion for alcohol and opium as adults could be readily traced back to constitutional instability acquired in early infancy. One patient, a confirmed invalid and morphinist before his thirtieth year, had never been a natural or healthy child, atter having been treated when an infant for over a year with continuous doses of opium given to "cure convulsions." Two children, the only degenerates in the otherwise perfectly healthy family of an Indian missionary, were found to have been intoxicated by a Hindoo wet-nurse. She was a confirmed secret opium-eater, unfortunately not exposed till two of the children of the family had suffered permanent injury from the poison in her milk.—The author states that many disquieting symptoms in children at, and just after puberty are referable to the improper use of opium in infancy. Such symptoms are intractable nervous dyspepsia, great precocity followed by sudden collapse of the overexcited faculties, great exhaustion following slightly excessive physical or mental exercise.—Children like this should be closely watched. They often have the "opium diathesis," and will develop the habit on the slightest occasion.—The conclusions are evident. Ignorant mothers must be again diligently warned of the dangers of soothing-syrups. Children should never receive opium in the smallest doses for more than a day at a time. Its administration should be altogether avoided unless the indication is urgent and not otherwise to be met. "When in doubt" use some other drug. B.

The Eustachian Catheter

In a recent number (May 19th) of the *Journal of the Am. Med. Assoc.* a useful paper on eustachian catheterization is to be found, by Dr. S. O. Richey, of Washington, D.C. The author believes that after the acquisition of a small degree of skill in the use of the catheter the practitioner will find it, as a rule, much superior to the Politzer bag. After pointing out the difficulty of regulating the force used with the bag, and the consequent danger of rupturing or permanently dilating the membrane, which is a fact and not a theory, the writer states that his own practice is to use the catheter in all cases where cleansing or opening of the tube is indicated. He at first injects "an antiseptic and astringent solution" into the pharyngeal end of the tube, and as a rule only at the second or third sitting allows the solution to reach the drum. Aspiration is said to be equally efficacious, and sometimes, when done in time, saves the trouble of paracentesis via the external meatus. He avoids complicated appliances, and uses only sterile silver catheters of the sizes recommended in the textbooks. B.

Presentation of a Loving-Cup and Album to Professor Abraham Jacobi

The *Medical Record* for July 7, 1900, gives a very interesting account of a dinner given by the Section on Diseases of Children of the American Medical Association, at its annual meeting, held at Atlantic City, June 5, 1900. On this occasion the presentation of a loving-cup and album to Dr. Jacobi was made by Dr. Louis Fischer, of New York, on behalf of the Section. The album contained engrossed resolutions signed by the members aptly setting forth the high esteem in which Dr. Jacobi is held.

Toasts were responded to by William Perry Northrup, of New York; F. X. Dercum, of Philadelphia; Joseph M. Mathews, of Louisville, Ky.; A. C. Cotton, of Chicago James C. Wilson, of Philadelphia; H. E. Tuley, of Louisville, Ky.; John H. Musser, of Philadelphia; William Osler, of Baltimore,; Henry Koplik, of New York, and R. C. Moore, of Omaha, Neb.

In his address of acceptance, Dr. Jacobi said: "The public at large also is tempted to embark in the most dangerous dilettanteism of all, viz., that of medicine. The cheap yellow or otherwise colored newspapers, and the facility with which strictly technical books can be obtained are a positive calamity. I know that a certain good textbook on the diseases of children, meant for the practitioner and the advanced student of medicine, is—to the advantage, I suppose, of the publisher and of the retailer who pockets his commission, and to the detriment of the public—sold over the counter of a well-known New York milk-shop. This is a demoralizing measure which appears to be quite general, if I may judge from what happened to me two years ago. I at that time received an invitation from the secretary of a so-called congress of (alleged) mothers, in which I was told that I was considered competent to deliver an address before them at 3 p.m. on a certain day, on the physical education of children, and that they would refund my traveling expenses to and from Washington, D.C., and also give me permission to sell my books then and there."

T.

SOCIETY REPORTS

AMERICAN MEDICAL ASSOCIATION—SECTION ON DISEASES OF CHILDREN.

ANNUAL MEETING, ATLANTIC CITY, N.J., JUNE 5 TO 8, 1900.

Second Day, Wednesday June 6—Morning Session.

1. Dr. A. L. SHERMAN, of New York, read a paper entitled **Demonstration of Home Milk Modifier**, and showed the method of using the "materna" devised by Dr. Sidney Hass, of New York.

2. Dr. JOSEPH H. BYRNE, of New York, read a paper entitled **Causation and Relative Frequency of Typhlitis, Perityphilitis, and Appendicitis in Infancy and Childhood.**—See PEDIATRICS, Vol. X., p. 91.

3. Dr. ADOLF BAGINSKY and Dr. PAUL SOMMERFELD, of Berlin, presented a paper entitled **The Control of the Milk Supply at the Kaiser and Kaiserin Friedrich Hospital for Children in Berlin.** This paper was read by the Secretary. The hospital possesses its own stable and dairy. The writers describe the arrangement of the stable in detail. The principal features are the cement floors, that can be easily flushed and drained; the glazed brick walls, which are frequently scrubbed, and the arrangement of the cows in the stable. The animals stand on platforms sloping to a ledge behind. Their buttocks project beyond the platform, so that their udders very rarely lie in the manure. In front of each cow is a table made of cement, with a food-trough of glazed clay. These tables are arranged at right angles to the long axis of the stable. The cows can thus be observed from all sides, not from behind, only as with the old-fashioned mangers. The water in the receptacles is renewed automatically. There is an isolating stable accomodating six cows. In this room cows are sheltered when they arrive at the dairy until they are examined and tested, and also any cows that show suspicion of disease. The litters are composed of sawdust, a material which has proved more efficient than straw. The sawdust is removed as soon as it

becomes soiled, and is thrown directly into pits that are dug in the yard outside of the stable through openings in the wall of the house. The dairy is situated in a separate building, and has walls, ceilings, and floors of white glazed tiles. Here the milk is filtered, cooled, and filled into the cans immediately after milking. No unwashed can is allowed within this building, and a room with separate entrance serves for washing the cans. No persons other than the employees of the dairy department can enter the building. The cows are of Holland breed, and are periodically inspected by a veterinarian. The tuberculin test is applied before admission and is repeated at intervals. The animals are allowed to run about in the open fields for several hours daily in good weather. The cows destined for feeding infants are fed on dry fodder, the others on moist fodder. Swill is not allowed within the stable, but the fodder is clean, wholesome vegetable food. Before milking, the stable, the hands of the milkers, and the udders are thoroughly scrubbed with soap and water. The milk is not allowed to stand in the stable but is sent to the dairy at once. There it is filtered through a sterilized linen cloth, and cooled to at least 10° C. in a specially constructed cooler. As soon as a milk can is empty it is filled with water to prevent the accumulation of dried sediment. At the hospital the milk is received by a person who has charge of the milk from that moment until it is sent to the ward. This maid must observe the strictest personal cleanliness. She has charge of the sterilization and preparation of the mixtures and is thoroughly instructed in the details of the work. Special attention is paid to the cleaning of the bottles. They are washed with soda solution and with a bent handle brush, rinsed with gravel in a special apparatus, and finally washed in sterile water. After use in infectious cases they are sterilized by steam. The milk is sterilized in a Henneberg apparatus holding 264 bottles. It is heated to 100–101° C. and allowed to remain at this temperature for half an hour. Freshly sterilized milk has no injurious effects upon nutrition of nurslings, and the cases of Barlow's disease that are said to have been caused by sterilized milk were due to the fact that the milk was stored for weeks and months before consumption.

The chemical examination of the milk at the hospital is conducted by Sommerfeld. The temperature of the milk must not exceed 10° C. on delivery to the hospital. The acidity is tested quantitatively, both at delivery and after keeping a sample of the milk in an incubator for an hour at 37° C. Chemical analyses are made from time to time, as occasion requires. The amount of dirt is tested several times a week in a special apparatus wherein the foreign matter is allowed to settle for two hours. The sediment is dried and weighed. The number of colonies of bacteria is counted in the ordinary way. Exceptionally the varieties present are determined. Special attention is paid to the milk of new cows, and the presence of pathogenic germs is tested by inoculating guinea pigs every month with some of the centrifuges sediment.

4. Dr. ALEXANDER MACALISTER, of Camden, N.J., read a paper entitled **Infant Feeding.** The author emphasized the importance of the study of infant feeding, inasmuch as the problems connected with this theme are by no means solved. In fact the progress made in life-saving of babies is alarmingly visionary. Our clear conception of the chemistry of human milk in all its minutiæ has failed to give us a synthetic breast milk capable of producing precisely the same physiologic effects as the natural product. Mother's milk for infants affords human food for a human being, and will go farther to solve the vexing problem of a persistently high mortality than all the chemical erudition in the world. The author pleads for a closer adherence to and a stronger advocacy of nature's method of feeding on the part of the profession. Two forces have to be combated for this purpose: The first is the disinclination of |mothers to nurse their children, the second the struggle for commercial leadership in the sale of artificial foods. The baby photograph is a delusion, for fat babies are not necessarily healthy babies.

Even if only one breast nursing a day can be given, let the child have the benefit of it. Part breast is superior to all hand, and should be so recognized.

Adequate flow of breast milk must be stimulated with all possible means. If all efforts fail, we must resort to clean cow's milk, properly diluted. Cleanliness in the dairy, the milk, the bottle, the infant—everywhere, counnts for vastly more than imitating the composition of average human milk. Home modification is the only possibility in a large majority of instances. If cleanliness is assured the milk need not be subjected to the usual sterilization. In modifying he uses boiled water. For infants under 2 months equal parts of milk and water will generally prove the proper food. A smaller quantity of water, or water with one of the artificial foods, may be added to the milk in older infants.

5. Dr. W. P. Northrup, of New York, read a paper entitled **Exact Infant Feeding; Accidents and Incidents.** The author called attention to the fact that the very accuracy of the laboratory methods of milk modification may give rise to accidents which are properly blamed upon the physician. It is not the method itself that is at fault, but the watchfulness of the medical attendant is sometimes lacking. Let us assume that perfect cleanliness is essential to obtain good milk; that percentage feeding is necessary to secure proper percentage of the food; and that a laboratory system is needed to get this proper percentage. When the physician prescribes a percentage mixture he consigns the infant to that prescription until he changes it. If he does not see that the prescription is properly altered as the infant grows older, disastrous results may ensue for the patient. The author cites a case of a baby that was put on Walker Gordon Milk, 2 per cent fats, 4.50 per cent sugar, 0.75 proteid, 5 per cent lime water; heated to 167° F.; 2 ounces at each feeding. By the 27th day the mixture had been increased to 3 per cent fat, 1 per cent proteids, etc. Soon afterward the patient went to the country and continued to use the Walker Gordon Milk. For 4½ months there was no supervision of the child, and no change in the food. At the end of the summer the child was given 3.25 per cent fats, 6 per cent sugar, 1.75 per cent proteids, and was again lost sight of for 3½ months. When seen at that time it was found to havedistinct symptoms of scurvy, which quickly disappeared under the influence of corrected diet, but a pronounced rickety skeleton was also found.

In connection with this history the author was reminded of an expression of one of his neighbors in New York, "That case died, and I gave it Walker Gordon Milk, too." The case was one of scurvy plus rickets, due to insufficiency of food ingredients in the milk. The author's experience leads him to believe that many babies are behind their age in the proportions they are taking in their laboratory feedings. His ambition is to graduate to full milk at 8 to 10 months. He suggests the following landmarks in percentage feeding from birth to 8 months of life:

I. Fats	2	per cent
Sugar	5	"
Proteids	0.75	"
Lime Water	10	"
Amt. in each feeding	2	oz.
No. of feedings	10	
Heat to	167°	F.
F. S. Pr.		

II. Low average breast milk: 3-6-1 per cent. L. W., 5 per cent; amt. 2-4 oz.; feedings 8, heated to 155° F.

III. High average breast milk: 4-7-2 per cent. L. W., 5 per.cent; amt. 4-6 oz.; feedings 6, heated to 155° F.

IV. At 6 months: 3-6-6 per cent. L. W., 6 per cent. Intervals 3 hours; feedings 6; amt. 6 oz. (not heated if in winter season).

V. At 8 months: frequently "full," milk "raw."

VI. In prescribing for sick and feeble infants they may be considered as physiologically younger than their accredited age.

VII. Keep the prescription balanced, i.e., the fats and other ingredients must be increased together, usually by fractions of 1 per cent.

DISCUSSION.

Dr. HENRY D. CHAPIN, of New York, said that in spite of the advances made in infant feeding there are many unsolved problems in connection with this subject. He does not think sterilization is an advantage, and has seen children get thin on sterilized milk, although it has been always freshly sterilized and not kept for a long time, as Baginsky relates. He believes that we are overdoing the percentage feeding. The fact is, we do not get the exact percentages by the laboratory method that we assume the mixtures to contain. Proteids are assumed to be in proportion to the fats, and we suppose that with a milk of given fat percentage we always have a certain ratio of proteids. Now this is true to a certain extent, but not exactly. When we think we get 0.75 per cent proteids, actual assay will show that 0.75 is only an approximate figure after all. Here is where the laboratory system fails. Another point which must not be forgotten is that the less manipulation milk undergoes the better and the more wholesome will it be. The great disadvantage of the laboratory method and of all other processes that attempt to give great accuracy in the composition of the milk, is that the milk has to undergo a great amount of manipulation, and that the centrifuge breaks up the emulsion. Once the emulsion is broken up there is no way of restoring it, and hence the mixtures that come from the laboratory are not cow's milk.

The speaker emphasized the necessity of getting milk that is bottled on the farm and delivered to the patient directly. Such milk is clean and not contaminated, provided the ordinary sanitary precautions are taken with cows and dairy. His method of modifying milk for infants appeals to the mother by its simplicity and at the same time is accurate enough for all ordinary purposes. It is based upon the fact that nine-tenths of the butter-fat in a quart bottle of milk rises to the top when the bottle is delivered within 12 to 24 hours after milking and bottling. Milk that has been bottled in this way on the farm can be distinguished by the line of cream which separates the upper from the lower layer. It must be remembered that in systems of milk modification where we are told to mix so much cream of such percentage fat, so much milk, etc., are inaccurate, because assays have shown that these creams do not contain the amount of fat that they are assumed to contain, and thus we are dealing with very inconstant factors. But if we take the whole of the cream in a given quantity of milk, we can be sure that we get a fairly constant percentage of fat. The dipper which he devised is simply a little tin pail with a long handle and holds exactly 1 ounce. Milk averages 4 per cent butter fat, and the first 9 ounces of milk in which the cream has risen in a quart bottle run uniformly 12 per cent fat. To be more precise, if you please, the so-called quart bottle, as a rule, contains 31 ounces of milk. The first 9 ounces contain 12 per cent butter fat. The proteids are assumed to be 4 per cent. Assays of a number of samples from various dairies in New York City have shown that this estimate is correct within ½ to 1 per cent. It was found that the law stated above about the first 9 ounces of the 31 is invariable. The amount of butter-fat in the cream layer can be calculated for any locality by assaying a sufficient number of samples, as has been done for New York. All we want is a clean milk and one of fairly uniform composition. Of course, the dairies must be instructed to comply with our directions, but such dairies can always be found. We know that the first 15 ounces of the bottle contain 8 per cent fat, and the proteids and sugar are assumed to be 4 per cent each in cow's milk uniformly, both in cream and skimmed milk. Thus our 15 ounces are milk in which the ratio of fat to proteids is 2 to 1. Of course, these figures are but approximate, but mother's milk itself varies in composition. The best way, if we must calculate accurately, is to calculate from the diaper end. Then we can tell how much of the milk is digested, and can appreciate the value of the mixture we are using. Women get tired of using the elaborate methods of home modification, and resort in their despair to one or other of the patent foods. The speaker's method can be used by any one. Having obtained as many dippers of the top part of the bottle as will be necessary, he adds the sugar which is also measured with the dipper, and mixes the whole with dextrinised wheat gruel. For example, he takes 12 per cent cream, i.e., the first nine dippers, rejects four of these, leaving five dippers, adds one and one-fifth dippers sugar and nineteen dippers wheat flour gruel that has been previously dextrinized. As each dipper contains 1 ounce, the whole mixture contains 24 ounces, which approximately contain 2.5 per cent sugar and 0.80 per cent proteids. This mixture is suitable for a baby 1 month old. By merely altering the amount of wheat gruel, sugar, and the number of dippers of cream, one can easily increase the percentage of any ingredient. The best diluent, in his opinion, is dextrinized wheat flour gruel.

Dr. VICTOR C. VAUGHN, of Ann Arbor, Mich., agrees with Dr. Chapin concerning the partial success that can be obtained by the percentage method. The animal body can easily take care of a little excess of one or other ingredient of the food.

He spoke at length concerning the failures of sterilization to protect the patient from pathogenic bacteria. Milk heated to 158° F. shows but slight changes in composition, but if it be heated to 160° changes of a serious nature begin to appear. Milk can be fairly well sterilized by repeated heating to 158°. It is not the sterilization itself that is the trouble, but the failure to sterilize. There is no amonnt of sterilization that will destroy the toxin of the colon bacillus. Of this toxin 1-270 grain can kill a guinea pig of the average weight. Thus, we see that prevention of contamination of the milk is more important than sterilization. Some physicians have an idea that if milk is sterilized it is perfectly safe, but this is not so. The colon bacillus, for instance, has an envelope that apparently encloses the toxin generated by this germ. The gastric juice will digest this cell-wall and thus set the toxin free. Even a temperature of 356° F. has no effect on this poison. Sterilization by unskilful persons may also be attended with accidents and contamination may result through the ignorance of the attendant.

Dr. W. L. Stowell, of New York, said that percentage feeding is not always the ideal method which it is supposed to be. Physicians must never forget that in prescribing a mixture suited to the particular conditions of a case, the therapeutic effect of the food is only temporary, and the mixture must be changed as soon as the indication for the therapeutic effect is removed. A child can not thrive without a sufficient amount of proteids. Whole milk should be given as soon as possible. Children will digest large amounts of casein if their digestion is healthy.

Dr. A. Jacobi, of New York, said that he had come here with the idea that he would learn how infants should be fed, but he finds that he was mistaken, for every speaker has given a different method. For his part, he thinks that, above all, the physician should mix milk with—brains. It is astonishing how handy brains are in the practice of medicine. Every man here told us how he feeds babies, and everyone thinks his way is right, but a lot of babies think that it is wrong. Pure milk cannot be digested by nine babies out of ten. He has taught for many years that cereals are best for dilution. When milk is sterilized wholesale and when it is then separated by the centrifuge, there is no way of making milk again out of it. So much for Walker-Gordon. Minute percentage changes are not rational, for mother's milk itself varies from hour to hour without any perceptible effect upon the child. It is fortunate that nature allows a great deal of latitude, for if it were so dangerous to give an infant a little more or less of one or other ingredient of milk, no child would live. A great deal of undigested food passes out in the stools of infants that are breast-fed, and the same is true, of course, of bottle-fed babies, e.g., as much as 9 to 11 per cent of the fat taken in normally passes out in the feces. This, of course, does not mean that we may be careless. He appreciates the value of boiling and milk modification, but believes that just now we are overdoing our theories. If we have clean milk of the right proportion we may be satisfied.

Dr. A. C. Cotton, of Chicago, said that he could not add anything to the succinct statement of Dr. Jacobi, save a hearty endorsement.

Dr. J. P. Crozer Griffith, of Philadelphia, said that statistics show positively that sterilization is capable of producing scurvy. Yet he believes in sterilization, but it must be used with judgment and need not be employed in all cases. Within the past six months he has seen four cases of scurvy in which the milk has never been heated. We do not know what causes scurvy. Of course the laboratory milk is artificial, but he believes that in the present state of our knowledge it is certainly one of the methods that may be used.

Dr. H. Koplik, of New York, agreed with Dr. Jacobi, that we should not mix milk according to mathematical formulas. One thing is certain, and that is, we must always distinguish the healthy child from the sick child. Carelessness or ignorance of the mother will sometimes produce contamination of the milk when it has been properly sterilized, and therefore we must also look out for these accidents. Nothing is more certain than that sterilization and pasteurization are still unsolved problems. Some physicians insist on raw milk, some on sterilization, some on pasteurization. It is true, of course, as Dr. Vaughn has stated, that sterilization is useless in the presence of toxins of such germs as the colon bacillus, nevertheless we know that sterilized milk can be kept in good condition longer than raw milk. It is impossible, he thinks, to get absolutely clean milk. Dilution is certainly necessary in one way or another to reduce the percentage of proteids and to break up the curds. Personally, he uses plain water for healthy children, but in sick babies he uses some form of dextrinized gruel.

Dr. NORTHRUP, in closing, said that in disagreeing we agree that clean milk is necessary. Of course, the mother can feed better than the doctor, but in the class of women he had to deal with this often can not be done. Mixing milk "with brains" is a good suggestion.

Dr. CHAPIN said that if we do not get clean milk it is our own fault. We can and do get it in New York. The physician must insist on cleanliness in the dairy, and he will get what he wants.

A Lotion for Burns.—

Dr. NIKOLSKY, cited in the *Journal de médecine de Paris* for January 28th, recommends the following lotion for burns that do not exceed the degree of vesication:

℞	Tannin, Alcohol, } each	1 part;
	Sulphuric ether	8 parts.
M.		

N. Y. Medical Journal, May 19, 1900.

Simple Catarrhal Conjunctivitis.—

℞	Acidi borici	gr. 40
	Sodii chloridi	gr. 6
	Aq. camphoræ,	
	Aq. dest.	āā ℥ 2

M. Sig.—Apply as lotion to eye every two hours.—*Jour. Am. Med. Assn.*

Canadian Practitioner and Review, June, 1900.

FOREIGN PEDIATRIC JOURNALS.

Abstracts of all Original Articles Appearing in Foreign Journals Devoted to Pediatrics.

PEDIATRIA, MARCH, 1900.

A Case of Severe Fetal Ichthyosis.—By GAETANO FINIZIO. The child's mother was a multipara, aged 35, apparently in perfect health. The father was also healthy, and there was no consanguinity between the parents. There was no history of ichthyosis in the family. The pregnancy was normal, but the labor was delayed, and the forceps were used. The child was born in a state of asphyxia and died soon after delivery. It was normal in size, shape and general development, but presented the anomalous condition of the skin known as ichthyosis. The integument of the entire body was thickened, inelastic, and with the exception of the hands and feet, consisted of plaques separated by fissures. These scales or plaques were of a yellowish-gray or yellowish-pink color, and varied in thickness between 4 and 10 millimeters. They differed in shape and size. They were detached with difficulty, revealing pink subjacent skin. The fissures separating the plaques varied in size and depth. The less deep ones were covered by a thin membrane resembling the scales in color. The deeper ones were dark-red and were not covered by membrane. The internal organs were normal, with the exception of the liver, the lungs and the brain. In the liver there were evidences of fatty degeneration. The lungs showed the presence of atelectatic areas, and the brain congestion of the meninges as well as of the cortex, stasis and thrombi in some of the cerebral vessels and meningeal and cortical hemorrhages. Partial or total chromatolysis was found in the cortical cells.

The lesions found upon microscopic examination of the skin were as follows: The lesions were principally confined to the epidermis, and consisted of a hyperplasia of the corpus mucosum, together with a pronounced keratification. The corpus mucosum shows both compression from the pressure of the enormous stratum corneum and hypertrophy. As compared to the skin of a full term child without skin lesions, the stratum Malpighii in the present case appeared considerably hypertrophied. The interpapillary spaces were abnormally deep.

PEDIATRIA, APRIL, 1900.

1. **Infant Feeding.**—By ALBERTO MUGGIA. The writer considers the question as to the proper time when an infant should be weaned, and gives the views of the authorities, and the customs in various countries. For his own part he believes that a child can be safely weaned at 14 months, provided this age does not coincide with the summer season. This rule is not absolute, but must be applied with judgment, according to the condition of digestion and nutrion in the child. If nursing is con-

tinued for an excessively long time, the infant becomes anemic and cachectic, because milk does not contain enough iron for the needs of the system (Bunge). The writer investigated the amount of iron in the tissues and blood of infants at different ages. He found that the healthy new-born child has a certain amount of iron in the system, that during the nursing period the amount of iron increases in proportion to the body weight, but there is no reserve fund of iron in the system of the nursling, as Bunge has asserted. However, the fact remains that it is very important not to nurse a child too long.

2. **Riga's Disease** (papillomatous ulceration of the frenum of the tongue, covered with a whitish diphtheroid exudate).—By SERAFIMO GIANELLI and GIOVANNI MEMMI. This affection occurs exclusively in infants, and generally during the second half of the first year. Of the 25 cases reported by the authors, 17 were between 6 and 9 months of age, 5 between 10 and 13 months and only three below 5 months. It occurs most frequently in infants who live in badly constructed, damp, dark, ill-ventilated rooms, and who are badly fed. As a rule it appears immediately or a short time after the eruption of the middle lower incisors, but has been observed in infants before the appearance of these teeth. Pathologically it is claimed to be a granuloma by Pianese, a papilloma by Fede. Its origin may possibly be traced to some infectious process in the cavity of the mouth. The authors show that the prognosis is good in the majority of cases. Cardarelli stated that the disease may be fatal, and Pianese regards it as a morbid entity that exercises a baneful influence upon the entire body. The author maintains that the atrophy and the cachexia that sometimes accompany this disease is due to entirely different causes than the presence of the papilloma. They have observed the growth several times in members of the same family, but cannot say that it is hereditary. They cannot deny the contagiousness of the affection, nor can they affirm it. In the treatment of this trouble the hygiene of the mouth and the cure of the gastrointestinal symptoms which accompany the affection are of great importance. As local remedies the writers used a 5 per cent. solution of protargol with good results. Excision does not cure the disease, but it often gets well without any local treatment whatever.

ANNALES DE MEDICINE ET CHIRURGIE INFANTILES, APRIL, 1900

1. **Pleurisies.**—By Dr. AUSSET. Pleurisy is quite frequent in childhood, and is usually secondary to diseases of the lungs, to rheumatism, influenza, or some other infectious disease. Exceptionally tuberculous pleurisy may be present as the first manifestation of tuberculosis. In adults a large proportion of pleurisies is due to tuberculosis. Sero-fibrinous pleurisy is less common in infants than empyema, and the latter type therefore is more interesting from the clinical point of view.

The writer speaks of the diagnosis of pleurisy in children, and of the differences in the physical signs which are obtained in adults and in the young. He reminds us that the well-marked chill and the acute pain in the side are not usually present in children, and that the physical signs are often ill defined, inconsistant and deceptive. He calls attention to the fact that a bulging of the side opposite to the one in which the fluid collects is often observed in children, thus reversing what we are accustomed to see in adults. It is due, says Ausset, to a compensating emphysema which rapidly develops in the opposite lung of the child. The writer does not value palpation as a means of diagnosis in children under the age of discretion, as one cannot make them count or speak aloud. (We have always utilized the cry of infants for testing the transmission of sounds through the chest,and believe that this is done by most clinicians.) Percussion must be light and gentle, for in the presence of an effusion in a young child one risks obtaining pulmonary resonance from the subjacent lung if one taps the thin chest wall too heavily. On auscultation one does not always obtain the typical signs of fluid, but at times only a diminished intensity of the pulmonary murmur. The presence of râles, cavernous or amphoric, may make one think of tuberculosis of the lungs, but these signs may be due to the bronchitis and the congestion of the lungs in pleurisy.

The three diagnostic signs of pleurisy in infants and children, according to the writer, are: Exploratory puncture, radioscopy, and the "signe du sou." In the great majority of cases exploratory puncture will remove all doubts. Occasionally, however, it deceives, and sometimes parents are so timid that they will not allow simple puncture to be performed. Radioscopy is an excellent method, as it allows to see the extent of the effusion, but unfortunately it can only be practised in hospitals or in the large cities where the necessary apparatus is at hand.

The "signe du sou" or coin test is therefore our last hope in some cases. Pitres, of Bordeaux, was the first to use this diagnostic method. If a sou be placed upon the chest of the patient at any point and this coin be tapped with another sou, at the same time auscultation be performed at a point opposite the region percussed,one obtains a clear metallic sound, just as though the sou be tapped close to the ear; if pleurisy with effusion be present one gets a dull, distant sound without any metallic resonance.

2. Vomiting in Diphtheria.—By Dr. Rolleston (Reprinted from the *Clinical Journal*, Jan. 31, 1900). While vomiting is frequently a prodromal symptom in scarlatina, it is not often observed at the outset of diphtheria. If repeated vomiting occurs in diphtheria it is a bad prognostic sign, because it testifies to an enfeeblement of the heart. The different types of vomiting which may be encountered in diphtheria are: 1. The accidental vomiting, which may be due to some extraneous substances that are present in antitoxin and that also produce the rash, the arthritic pains, and the occasional elevation of temperature. Another form of accidental vomiting in diphtheria is due to the postdiphtheritic paralysis, but this is more properly a regurgitation of the food than real

vomiting. 2. The persistent vomiting of diphtheria, which is a grave symptom. This may occur at any time in the course of the disease, during convalescence, or some time after the paralysis has set in. Its pathogenesis is attributed to an irritation of the vagus nerve, or to local conditions in the stomach, or to uremia.

The uremic theory is the oldest, and has not many supporters now; the nervous theory is certainly reasonable. The third hypothesis assumes that the diphtheritic process extends to the stomach by continuity from the pharynx. Kalmus found membranes in the stomach of a patient who died of diphtheria, but such cases are very rare. It may be that membranes are swallowed by the child and thus the stomach affected. The fact that blood is found in the vomited matter in many cases of vomiting in diphtheria points to the presence of an inflammatory condition in the stomach in such cases. A fourth theory assumes that the primary lesion is a diphtheritic gastritis which extends to the endings of the left pneumogastric and produces an ascending neuritis in the nerve thus causing reflex vomiting.

The prognosis of persistent vomiting in diphtheria is very grave, especially if the vomiting coincides with or immediately follows the acute stage of the disease. It is less severe if the vomiting comes on later in the course of the disease or during the convalescence. There is an intimate relation between the heart and the persistent vomiting, for such attacks of vomiting are usually accompanied by degeneration of the heart muscle, by dilatation of the heart and enfeeblement of the pulse. In speaking of the treatment of these cases the author emphasizes the mode of feeding the patients. Rectal alimentation must be used to avoid the recurrence of the vomiting, but unfortunately this method of feeding cannot be continued for any considerable length of time, as the rectum is irritated, and one must try to return to feeding by mouth as soon as possible. Intubation combined with tracheotomy in dogs prevents the occurrence of vomiting as long as the tube is in place, but when it is removed, the animal begins to vomit. In children this method is not successful, for intubated children vomit in spite of the presence of the tube in the larynx. When the heart is weak we must give alcoholic stimulants, but as alcohol is a nerve poison it may hasten the degeneration of the nerves. Hence the writer prefers to give these patients hypodermic injections of strychnine, and alcohol only in small doses. Small doses of morphine, if possible by mouth, will serve to allay gastric irritability. In case of diaphragmatic paralysis we may try subcutaneous injections of atropine or belladonna internally.

3. **Treatment of Typhoid Fever in Children, Particularly the Use of Cold Baths.**—By A. B. MARFAN. The writer bases his report upon the treatment of typhoid fever in children which he has used for the past six years. When called for the first time to a case of typhoid fever in a child, he first tries the effects of quinine. If the rectal temperature taken in the afternoon exceeds 39° C. he gives 0.75 of bichlorid of quinine in three doses, each at intervals of half an hour. If the drug has not produced a lowering of the fever at least one degree on the following morn-

ing, he prescribes baths. If the action of the quinine is manifest, he continues to give this drug whenever the fever exceeds 39° C. in the afternoon. The bath is given at 32° C. and lasts from 8 to 10 minutes. Three hours later the temperature is measured, and if it exceeds 39° C. a second bath at 30° C. is given, and so on, progressively lowering the temperature of the bath until 25° C. is reached. The temperature is measured three hours after the bath, and if it is equal or exceeds 39° C. the bath is repeated; if it is below that mark, the temperature is measured two hours later, etc. During the six years in which he has used this method of treating typhoid the mortality in his clinic was 7 per cent in children with typhoid. In cases of hyperthermia not modified by the baths he uses injections of artificial serum, with or without caffeine, and in some cases has obtained good results even under these conditions.

4. **The Use of the Stomach-Tube in Nurslings.**—By Dr. HEUBNER (Reprinted from *Therapie der Gegenwart*, January, 1900.) Until now but very little systematic work has been done with the stomach-tube as regards investigation of digestive disorders and gastric diseases in infancy. Test meals are not easily administered at this age, and the tests for hydrochloric acid which are of such help in the adult are not conclusive in infants, as the casein of the milk seems to absorb a large part of the free gastric acid. Heubner instituted a series of examinations of the gastric contents in all the severe cases of disorders and diseases of the stomach in infants that have come under his observation. He found that the gastric juice exercises a certain amount of election as to the rapidity with which the different elements of the food are digested, the nitrogenized substances always remaining longest in the stomach. In dyspepsia of infants the stomach should be emptied by means of the tube and irrigations with normal salt solution employed. If inflammation of the bowels coexist, this treatment of dyspepsia will not give such good results as in ordinary cases. In the presence of athrepsia, also, one cannot expect so much from the stomach tube as in cases of average severity. In obstinate anorexia in infants the writer first washes the stomach in the ordinary way, then introduces a small quantity of Carlsbad water (20 to 30 grams) into the tube. Feeding through the tube may be necessary in such cases. In congenital cramp of the pyloric orifice lavage is of no avail.

5. **School Hygiene.**—By JULES DELOBEL. The writer gives a resumé of the general principles of school hygiene, and considers the physical hygiene of the schoolboy and schoolgirl in detail. He does not present any new facts, and most of the measures recommended are only of local interest, as they conform to the usages and to the climatic conditions of the country.

JAHRBUCH FUER KINDERHEILKUNDE, APRIL, 1900.

1. **A Contribution to the Cerebral Affections Complicating Pertussis.**—By Dr. HOCKENJOS. The author gives a review of the cases reported in

literature and describes a case of cerebral hemorrhage complicating whooping-cough in a child 3 years old. After a particularly severe paroxysm of cough the boy was taken with a sudden attack of dyspnea accompanied by rapidly increasing cyanosis, intense restlessness, stridulous breathing, and weak, rapid pulse. At first it was thought that some food had been aspirated into the larynx, as there was continuous irritating cough and particles of food were found in the pharynx; examination of the lungs was negative. Fifteen minutes later the child became completely unconscious, and a left-sided hemiparesis which included the facial region rapidly set in. After about an hour this was followed by clonic convulsions of the paralyzed side, which continued for about two hours and terminated in the death of the patient. The clinical diagnosis was cerebral hemorrhage, and the autopsy revealed the presence of two small, fresh hemorrhages in the floor of the fourth ventricle, in the region of the ala cinerea, and a number of minute hemorrhages in the pons. After studying the question from the published cases as well as from his own, the writer concludes that varions portions of the central nervous system may be affected in the course of whooping-cough. Paralyses are comparatively rare but more frequent than heretofore supposed. It has not as yet been demonstrated that these paralyses are due to the action of the toxin of pertussis or to carbonic acid poisoning. Autopsies, however, have shown that cerebral hemorrhages play a prominent role in the etiology af these paralyses. The occurrence of the circulatory disturbances which produce the bleeding in the brain is due to the violence of the paroxysmal cough, which is characteristic of the severe cases of whooping-cough, as well as to the depression of the general health which accompanies this disease.

2. Concerning the Elimination of Uric Acid.—By Dr. FRIEDRICH GOEPPERT (Continued. Vide PEDIATRICS, Vol. X, pp. 35). The author cites a series of experiments recorded in literature which show that the elimination of uric acid depends only on the nature of the food, not on the amount of nitrogen contained in the substances eaten. If the food be the same, the elimination of uric acid will bear a certain relation to the nitrogen of the urine. Although the absolute quantity of uric acid eliminated varies with age, it only does so on account of the quantity of food consumed, and age or sex have nothing to do with the question. In answer to the question, under what conditions is the elimination of uric acid normal, and when is it pathologic, the writer cites another series of experiments, and replies that the quantity of uric acid eliminated bears a definite relation to the total nitrogen of the urine with a given quality of food, and hence it is possible to determine when the elimination exceeds the normal. Abnormal variations may occur in cyclic albuminuria and in nephritis. There is no typical condition of the urine which enables us to diagnosticate the presence of lithemia.

3. Second International Congress for the Care of Children—Budapest, September 14 to 17, 1899. Brief notes of the discussions.

4. **On the Question of Functional Heart Murmurs in Earliest Infancy.**—By Dr. Swarsensky. The writer reports the case of a girl aged 1 year and 5 months, born at the seventh month of gestation. It was brought to the clinic because the child did not seem to thrive. Mother syphilitic; child badly nourished, and rachitic. A mitral systolic murmur, soft in quality, heard at the apex, somewhat louder over the pulmonary region. This murmur disappeared two days before the death of the child from pneumonia. The autopsy showed no congenital anomaly of the heart, only a slight dilatation of the right ventricle, and anemia of the body in general, as well as of the heart muscle. Hence the murmur was functional, especially as the sound disappeared from time to time. This is directly in opposition to Hochsinger's dictum, that functional murmurs do not occur in the first years of life.

REVUE MENSUELLE DES MALADIES DE L'ENFANCE, APRIL, 1900.

1. **The Elimination in the Urine of Some Sugars Introduced into the Gastrointestinal Tract or into the Blood Subcutaneously in Children.**—By Dr. P. Nobecourt. Sugars play an important part in the development of the organism; a glycogenic substance which can change into glycogen is found in the tissues of the embryo. The writer studies a question which has hitherto received but little attention—the action of the intestinal mucosa upon the lactose and saccharose that are absorbed in digestion, and the limits of assimilation of glucose by the liver and the tissues of the body in general when it enters through the digestive tract or subcutaneously. After giving in detail a number of interesting experiments, he concludes as follows: In general the mucous membrane of the infantile intestine possesses a marked capacity for absorption of lactose. It can absorb at one dose more lactose than is contained in the amount of milk ordinarily taken at one nursing. This property is, as a rule, more marked in the infant than in the adult, but there are exceptions. The intestinal mucosa of the infant possesses the same property as regards saccharose, namely, of inverting and assimilating this substance in considerable quantities. If solutions of the same proportion of dilution be employed, it seems that the amount of saccharose assimilated equals that of lactose. Glucosuria has not been observed in infants by the writer as a result of the ingestion of lactose or saccharose. The power of assimilating glucose is in fact greater in infants than in adults. Where glucosuria occurs in infancy, e. g., in rickety children, it is of great diagnostic value. The marked power of assimilation of glucose is not limited to the liver, but extends to the entire body.

2. **Surgical Intervention in the Deformities following Infantile Paralyses, Particularly the Indications for Osteotomy.**—By Dr. Delanglade. In the simplest cases tenotomy is sufficient to restore the lost equili-

brium of muscular action. Arthrodesis is indicated when the joint is powerless, because all the surrounding muscles are affected. Transplantation of tendons may be tried when certain groups of muscles are destroyed by atrophy and the antagonists which have remained active place the limb in a vicious position. Arthrodesis, however, is not always successful, because a paralyzed limb never favors the formation of strong and true bony callus. In order to succeed in obtaining a firm union it is necessary to immobilize the limb for a long time, and in operating one must take great care to cut the surfaces of the bone so as to secure complete adaptation. The writer prefers the use of osseous pegs to silver wire for uniting the bones. Transplantation of tendons alone will not always correct the trouble, especially if there is a bony deformity of long standing, and if other muscles of the part are paralyzed and atrophied. Arthrodesis, tenotomy, etc., may in such cases be necessary in combination with the transplantation.

The writer has also employed osteotomy of the femur for the purpose of straightening a limb distorted by paralysis of the thigh muscles, and has obtained good functional as well as prosthetic results.

JAHRBUCH FUER KINDERHEILKUNDE, MAY, 1900.

1. **Concerning Milk Sterilization.**—By Dr. A. WINTER. (Strassburg). The writer performed a series of experiments in order to determine the comparative efficiency of the various methods of sterilization. After the milk had been sterilized it was found that it could be kept for an indefinite length of time in the ice chamber without spoiling. If it was kept in an incubator at 37° C., however, it was liable to spoil, just as though it had not been previously sterilized. The experiments showed also that fractional sterilization had no advantage over the continuous method. In no case must the exposure to heat be too prolonged as the formation of caramel largely depends upon the length of time during which the milk is exposed to the influence of heat. Fractional sterilization is too elaborate for ordinary practiice; when it is employed it does not matter what method of keeping the milk in the intervals between the heatings is used. The best method of sterilization is heating the milk up to from 125 to 130° C. for a few seconds. The milk does not change from this amount of heat, nor is there any caramel formed. As heating milk to this high temperature is inconvenient in ordinary practice, the author proposes that the milk be heated from 100.7 to 102° for from 20 to 30 minutes. Milk is best preserved for transportation, etc., by packing in ice and cooling to a temperature if possible below 15° and then wrapping the bottles in some material that is a bad conductor of heat.

There is no way of absolutely and permanently sterilizing milk at present. The most resistant germ is the bacillus mesentericus, which was found by Biedert after twelve successive heatings, which rendered the milk unfit for nurslings. We must be satisfied, therefore, with the present method if it gives us temporarily the advantages of real sterilization.

2. **Concerning Sublingual Fibroma of Nurslings** (Sublingual growth of Fede.) By Drs. J. Callari and L. Philippson (Palermo).—The writers describe the clinical and paihologic features of this rare affection, which is but little known outside of Italy. They report 8 cases which they observed during the past five years among 6,000 dispensary patients in Dr. Carini's clinic. A brief description of the same affection appeared in our abstract of an article which was published in *Pediatria*, April, 1900; see page of this volume.

3. **Dr. Joseph O'Dwyer. Memorial Oration.** By Dr. Johann von Bokay (Budapest).—An account of the life and work of the noted American pediatrist, read at the general meeting of the Royal Medical Society, of Budapest, October 14, 1899.

4. **Concerning Umbilical Sepsis.**—By Dr. H. Finkelstein. Basch claimed that all septic processes in the navel of the newly born are manifestations of pyemia, in other words, metastatic suppurative foci. The writer proves that this is not the case by giving the histories of four cases in which the navel was undoubtedly the avenue of infection, and the process was simply a wound infected with germs of suppuration. The infection is, as a rule, local, and only in the severe cases does it become general. General infection, as a rule, only occurs in the cases in which the process is from the first a primary lymphangitis. The writer classifies infections of the umbilicus as follows: 1. *Local Infections of the Umbilical Wound* (*a*) superficial infection, blenorrhea of the navel; (*b*) ulcerative process, ulcer of the navel. 2. *Local Infection with Involvement of the Surrounding Skin.*—Omphalitis simplex, abscedens, gangrenosa, ulcerosa. 3. *Progressive Disease of the Navel* (*a*) umbilical thrombophlebitis and periphlebitis; (*b*) thromboarteritis, suppuration of the whole length of the arterial thrombi; (*c*) periarteritis, umbilical lymphangitis, primary, or secondary to omphalitis or ulcer; (*d*) internal umbilical phlegmon, preperitoneal.

PEDIATRICS

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VOL. X. AUGUST 15th, 1900. No. 4

ORIGINAL ARTICLES

THE USE OF THE DIPHTHERIA ANTITOXIC GLOBULINS OF THE BLOOD SERUM INSTEAD OF THE ENTIRE SERUM IN DIPHTHERIA*

By WILLIAM H. PARK, M.D.

Associate Professor of Bacteriology and Hygiene in the University and Bellevue Hospital Medical College.

(From the Research Laboratory of the Department of Health of the City of New York).

EVER since the discovery of the value of diphtheria antitoxin in the prevention and treatment of diphtheria, it has been the desire of those using and producing the serum to separate the diphtheria antitoxin from the blood serum, with the hope that in this way the antitoxic effect might be retained, while the deleterious effects sometimes produced by injections of blood serum, as evidenced in the rashes and the effect on the red blood cells, might be avoided. As investigations progressed it has become more and more evident that the antitoxic substances in the blood are closely combined with the globulins of the blood, and that whatever precipitates them precipitates the antitoxin also. In fact, without globulin there appears to be no antitoxin, and wherever antitoxin exists globulin does also. Up to the present time no difference has been detected between globulin which is not antitoxic and that which is, except in the specific characteristic of neutralizing toxin. The latest investigations on this subject have been made by Atkinson in the Research Laboratory of the Health Department of the City of New York, and by Seng in Germany.

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* Reprinted by Courtesy of the Editors of the *Jacobi Festschrift*.

At the Research Laboratory of the Health Board of the City of New York, we have made it a point to draw blood from all the horses which are to be used for the development of antitoxin before they have received any injections of toxin. This so-called normal blood, as well as the later drawings of antitoxic blood, are tested for the amount of globulin and the amount of antitoxin.

A most remarkable example of the relation between the increase of antitoxin and the increase of globulin has thus been shown. These tests have been made by Mr. Atkinson, assistant chemist, and through his kindness I quote the following recent tests of a number of blood drawings from a horse (No. 137) showing rapid variations in the amount of antitoxin equal to two units cc. This is the largest quantity that we have met with. Whether this substance in normal blood should be considered a general or specific antitoxic substance is an interesting question which is now being investigated.

Date of bleeding.	Amount of serum.	Amount of globulin.	Amount of Diphtheria antitoxin in each cc.	Amount of albumin.
7-28-1899..........	10 cc.	.3235	2 units in each cc.	.3127
10-20-1899..........	"	.8987	1200 units " "	.2341
11- 9-1899..........	"	.5934	650 units " "	.2727
11-14-1898..........	"	.5116	600 units " "	.2938
11-18-1899..........	"	.4292	400 units " "	.3133

Between the first and second bleedings, weekly injections of strong diphtheria toxin were given; the last injection being 300 cc. of a toxin of which 1/800 cc. was the fatal dose of guinea pig of 250 gms. weight. Between the second and third bleedings two injections of toxin similar in amount to the last noted were given. It is interesting to observe that, in spite of the continued toxin injections, the amount of antitoxin and globulin both rapidly diminished. Between the last three bleedings no toxin was injected. The above table gives a striking example of what Mr. Atkinson has found in all our horses. In no case has increase in globulin failed to accompany increase in antitoxin.

These facts—the constant association of globulin with antitoxin and the constant fairly proportional increase or decrease of the globulin in the horses' blood with the increase or decrease of antitoxin—bring the relation of these two substances so closely together that, while fully justified in saying that antitoxic substances are globulins, still I think that we must for the present at least consider that when we have obtained the globulin of the antitoxic blood we have obtained as nearly pure antitoxin as we have at present a prospect of getting.

I therefore decided to use this "antitoxic globulin" in cases of diphtheria in place of the blood serum entire. The globulin with its antitoxin was obtained as follows: It was precipitated from the antitoxic serum by means of saturating it with magnesium sulphate, and then filtered off. The globulin was then pressed between a number of layers of filter-paper so as to remove as much of the saturated magnesium sulphate solution clinging to it as possible. The globulin and remaining magnesium sulphate were then dissolved in a quantity of water equal to one-half the original bulk of serum from which the globulin was obtained. The magnesium was then precipitated out as the phosphate (sodium magnesium phosphate) in the following manner: A little sodium chlorid is first added, to prevent the precipitation of the magnesium as a hydrate, when the sodium hydroxid is added. Sufficient sodium hydroxid is then adedd to make the solution slightly alkaline. Finally, the calculated amount of disodic hydrogen phosphate is added. The mixture is allowed to stand in a cool place and stirred occasionally. Afterwards the precipitate of the magnesium is filtered off. The filtrate contains all of the globulin and all of the antitoxin together with about 10 per cent of the sodium sulphate and a trace of sodium chlorid. Each cubic centimeter of the fluid will contain twice as many units as the original serum.

In practice I have diluted this antitoxic globulin so that each cubic centimeter contained the same number of units as the original serum, as the concentrated solution seemed slightly more irritating locally.

Up to the present time the globulin has been used in 48 cases with the following results:

Locally, in about one-fourth of the cases it causes some local edema with slight pain—both somewhat more than the serum ordinarily produces.

Upon the diphtheria the results are equally good with those from the use of the antitoxic serum. As to general effects, such as the rashes, results have been similar to those following the use of the serum.

Permanence.—The dried globulin has retained for two months the greater part of its antitoxic properties.

Solubility.—It is easily soluble and can be readily put up in tablets and so transported without danger.

Summary.—As a whole, these results are very disappointing, as this antitoxic globulin apparently contains the greater part at least of these substances which cause the more or less deleterious effects of the blood serum, and as there seems no probability of separating the antitoxic properties from the globulin, the present outlook for a substance which, while being a specific neutralizing substance for diphtheria, will at the same time be absolutely harmless, is not encouraging. What is true for diphtheria antitoxin is also probably true for other protective serums.

There seems to be some practical advantage, however, in having a soluble, permanent, and compact dry antitoxic substance which is not in danger of quick deterioration.

Further chemical experimentation will probably be able to show a practical method for separating the sodium sulphate from the globulin, if that seems desirable. Except for its slight local irritant effects, the sodium sulphate seems harmless.

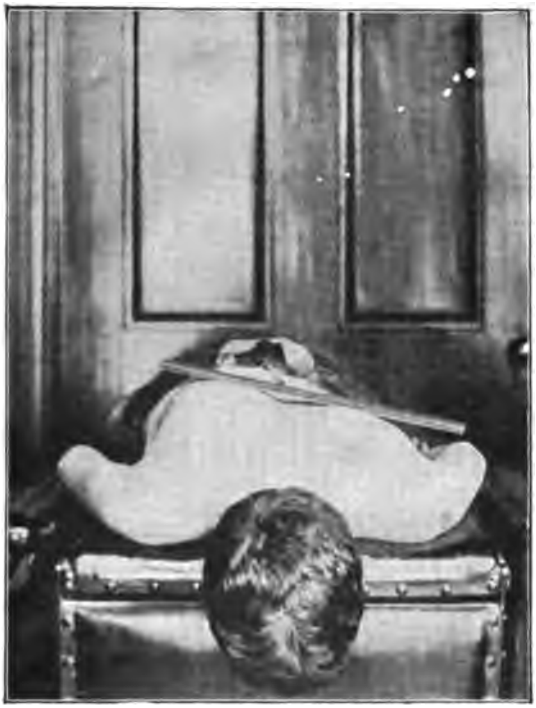
ERRATUM.

"Fostering," on page 44, line 31, Vol. X., No. 3, Dr. White's article ("The Diagnosis and Treatment of Dephtheria,") should read "festering."

A SUSPENSION-PRESSURE CHAIR FOR ROTARY-LATERAL CURVATURE OF THE SPINE.*

By PHILIP HOFFMANN, M.D.,
St. Louis.
Member of the American Orthopedic Association; Chief of the Orthopedic Clinic (Polyclinic), Medical Department, Washington University, etc.

KNOWING that excellent apparatus already exist for suspension-pressure correction of scoliosis, my only excuse for presenting this one is its simplicity and inexpensiveness, which permit it to be placed in the homes of patients where parent or nurse can be instructed in its use.



The apparatus consists of the pressure chair described by Bradford,† with the lateral steel bars prolonged upward to a height of four feet and a half, and meeting overhead to form

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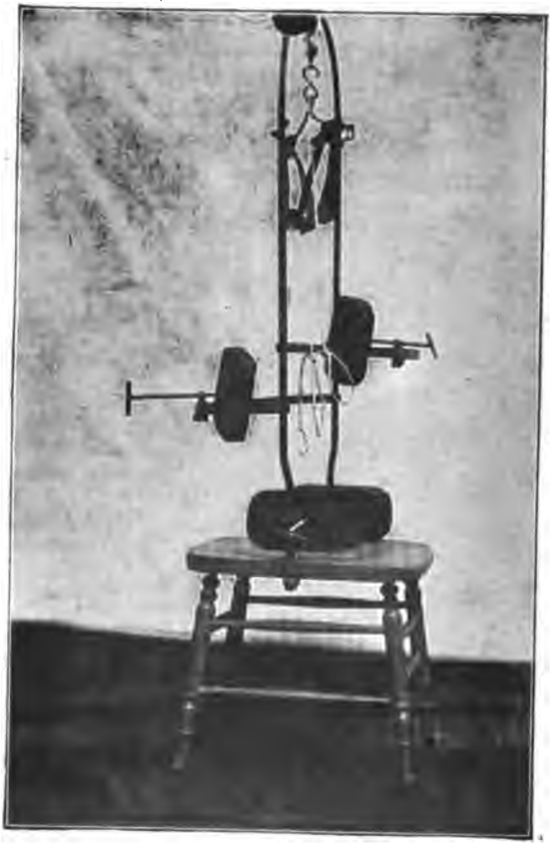
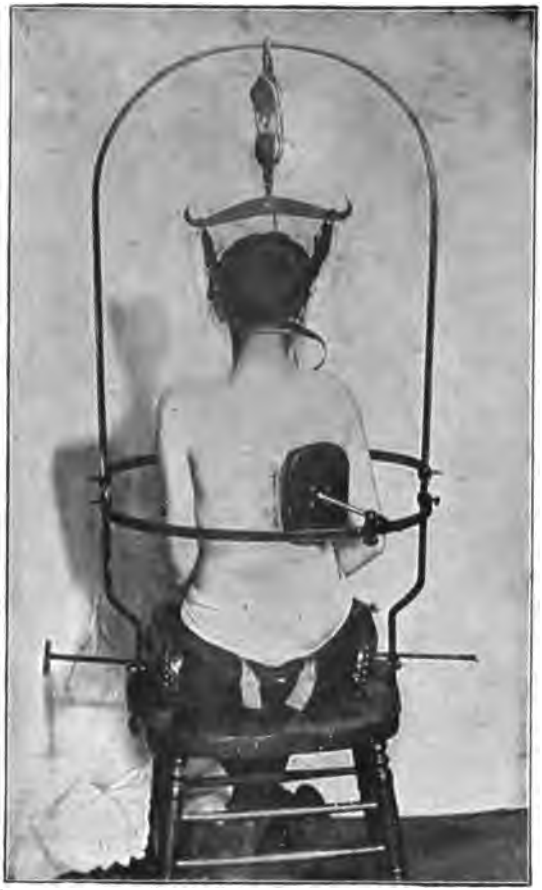
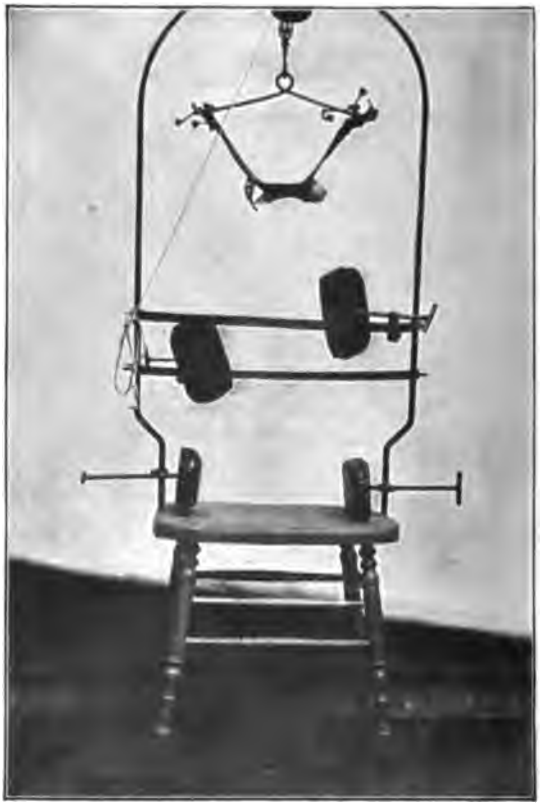
* Read before the American Orthopedic Association, at Washington, D.C., May 1, 1900.

† Trans. Am. Orthopedic Association, 1891.

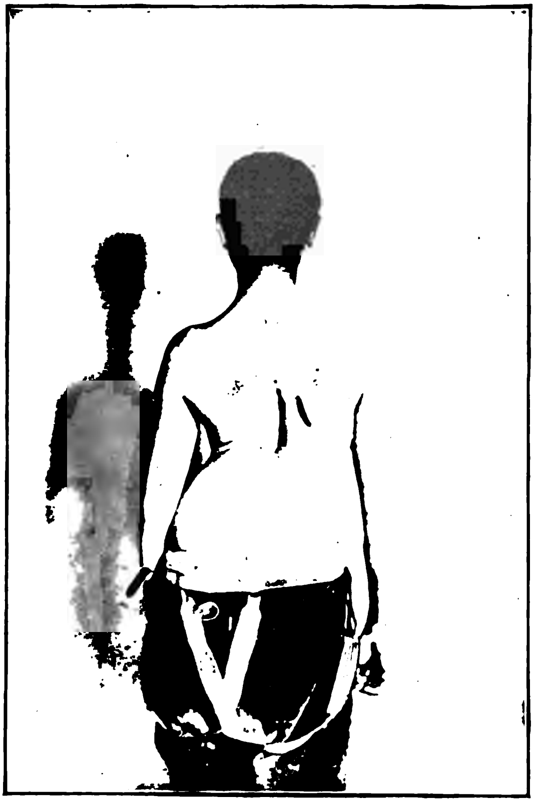






an arch, to which is attached an ordinary suspension apparatus with compound pulleys. The semicircular steel bands can be raised to any height on the uprights, and the anterior and posterior pressure pads moved laterally upon the bands to correspond to the points on the chest and back where pressure is most desirable.

A detailed description is hardly necessary, as the photographs are self-explanatory.



When the patient has such an apparatus in his home, he should use it two or three times daily, the time varying from ten to forty minutes, which, in the course of weeks when summed up, will make many hours of direct corrective force applied to his deformed trunk. It should be used only as an accessory to proper gymnastic exercises and other treatment.

705 North Channing Avenue.

A CASE OF NASAL DIPHTHERIA COMPLICATED BY BRONCHOPNEUMONIA.*

By SAMUEL McC. HAMILL, M.D.,

Instructor in Clinical Medicine, University of Pennsylvania; Visiting Physician to the Howard Hospital, and to the St. Christopher's Hospital for Children.

M. T., aged 7 years. Family history negative. Previous history includes a severe attack of measles, habitual indigestion with frequent acute exacerbations, and occasional skin eruptions, apparently of gastrointestinal origin.

She was first seen in the present illness on the 24th of June, 1897. For five days she had been suffering from what her mother considered an ordinary "cold in the head." On the afternoon of the preceding day she sickened rather suddenly with an attack of vomiting, her temperature rose rapidly and she passed an exceedingly restless night. She seemed better the next morning. As the day advanced she grew worse and at the time I saw her, her condition was as follows: She was restless, and had been vomiting some during the day; her cheeks were flushed, her expression anxious, her respirations rapid, superficial, and labored. The alæ nasi played freely. Palpation showed no change from the normal tactile fremitus. The percussion note was but little changed; over the base of the left lung posteriorly there was an area of very distant breathing, rather higher pitched than that heard elsewhere. The heart's action was rapid; there was a slight systolic murmur at the apex and the pulmonary sound was slightly accentuated. The abdomen was somewhat distended but there was no tenderness. An examination of the throat showed only moderate pharyngeal redness. There was some nasal obstruction which was not complete and did not prevent nasal breathing; there was no acrid nor bloody discharge at this time. The nasal condition was looked upon as a simple coryza. There was a slight cough, and the temperature was 104½° F. On the following morning the temperature had risen to 105° F.; the patient had passed a very restless night, was somewhat delirious, and had secured very little sleep. Her cough had increased. She continued restless and delirious. Her respirations ranged between 40 and 50 and her pulse between 140 and 150 per minute. There was practically no change in the character of the physical signs. The temperature fluctuated during the day between 103 and 105, falling at 8:30 p.m. to 100. Sponging had been resorted to on several occasions. From 8:30 p.m. it rose rapidly again until 11:30 p.m., when it reached 105 2-5° F. The child when seen had a slight epistaxis, and a small crust was protruding from the right nasal passage. Merely as a precautionary measure and not because this condition was thought to be diphtheritic in character, cultures were made from this side of the nose and from the throat and sent to the City Department of Bacteriology. By midnight or two hours later, as the temperature could not be controlled by sponging and as the child was exceedingly restless, she was again seen. Another careful examination of the throat was made at this time with negative result, which fact, together with the mild character of the nasal obstruction, led to the conclusion that the nasal condition was probably not diphtheritic. The temperature during the balance of the night ranged between 104 and 105 2-5° without any response to warm or cold sponging and very little to cold packs. The child was exceedingly restless. The temperature responded better during the following morning, but quickly rose after the sponging. on several occasions rising as much as 3 3-5° in the course of a half hour. The temperature during the after part of the day remained lower, and, as on the previous day, reached its lowest in the early afternoon. The child was more comfortable, and the heart's action, which had been quite weak in the early morning, was somewhat stronger, and the physical signs were little changed except that the percussion note was higher pitched, and in the lower axillary region there was a small area of distant and bronchial breathing. The report of the Board of Health, received in the late afternoon, showed the presence of the Klebs-Loeffler bacillus in great abundance from the nasal culture, and in moderate quantity from the pharyngeal culture.

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* Reported to the Section on General Medicine of the College of Physicians, Philadelphia, June 13, 1898.

As soon as possible the child was given an injection of 1000 units of diphtheria antitoxin. The temperature rapidly rose 3½ degrees and continued up for a number of hours. There was very little change in the general condition of the child on the following day, but the nasal condition was better. The absence of any further extension of the pneumonic process, the possibility of a pneumonia dependent upon the Klebs-Loeffler bacillus, and the existence of a moderate amount of unilateral nasal obstruction, with no improvement in the general condition, led to the administration of another dose of antitoxin of half the quantity of the first. The temperature remained very high during the next 24 hours. At the end of this time another injection of 300 units was given. The same evening at the apex of the right lung there appeared some impairment of the resonance just beneath the clavicle, with some prolongation of the expiration. At the same time the respirations became more rapid and labored and the child very much distressed.

The entire upper lobe of the right side was consolidated by the next morning, and following this areas of consolidation developed in the apex of the lower lobe. These gradually extended until the entire lower lobe seemed to be involved, the only area of resonance in the right lung corresponding to the middle lobe. The temperature fluctuated greatly. Accompanying this new involvement the general condition became alarming; the child fell into a stuporous condition; she picked at the bedclothes and went through the motions of gathering up various objects, such as pencil, pens and pins, putting them to their respective uses. Her stomach, which had been irritable from the beginning, became more so. Vomiting was frequent, the heart's action weaker, more rapid and irregular. The urine at this time showed a slight trace of albumin, without casts. On the 5th of July, two days after the involvement of the right lung, an area of dulness was discovered over the apex of the left lower lobe. Emaciation became very rapid. On the 6th of July the stomach retained so little that nutritive enemata were given; on the 7th the bowels were very loose and the enemata were not retained. No nourishment was given for a period of 12 hours, after which it was given by the mouth in small quantities frequently repeated. During the 8th of July the child seemed to have some earache, and on the following day both ears began to discharge freely. There was no apparent change until the 11th, when the stomach became less retentive; on the 12th practically nothing was retained by stomach or bowels. The bowels were very loose, the movements full and frequent; the child was desperately weak and had to be supported by hypodermic stimulation. Forty-eight hours later she had improved, and from this point her convalescence was rapid and persistent. On the 3d of July she sat up in bed for one hour, and by the 1st of August she was taken to the country. When examined in October she was perfectly well; her hearing, which had been almost entirely lost, was perfectly restored.

The treatment was entirely symptomatic. Small doses of strychnia with brandy were given rather early, and tincture of digitalis was given, as the condition of the stomach permitted, with excellent effect, from the 6th of July until convalescence was well established.

The special interest attached to this case is the presence of a mild diphtheritic rhinitis, which apparently existed for several days without giving rise to any general symptoms of note, and the final recovery from the prolonged, violent, migrating pneumonia. It seems probable that the pneumonic process was dependent upon the diphtheria, although there was no evidence of pharyngeal or laryngeal involvement. Bronchopneumonia secondary to diphtheria, limited to the nasal cavities, is rather uncommon. It is much more likely to follow the laryngeal forms. There were no paralyses nor after-effects following this attack. As has been expressed above, the convalescence was unusually rapid.

Nasal diphtheria is evidently much less contagious than the pharyngeal or laryngeal forms. In this particular case the child had been taking care of her infant sister, holding her in her arms and frequently kissing her up to the time of the development of her pulmonary symptoms. The disease was not transmitted, notwithstanding the fact that prophylactic measures were not resorted to.

EDITORIAL COMMENTS

The Iniquities of the Barber

We note with no little satisfaction that the agitation for cleanliness in the barber's shop is extending. A timely editorial in the *Medical Record* of February last summarized the results of the movement to that time, namely, that several of the large cities and smaller municipalities in this country and Europe have formulated and enacted a fairly practical and effective Barbers' Act.—We wait anxiously to see how soon the Health Department of this city will move in the matter. The expense of boiling scissors, clippers and razors after each using is little or nothing. If aluminum combs are used, they also can be boiled. The sterilization of the hands afresh for each patron is surely not a grievous requirement. Brushes and shaving brushes can be abolished altogether and to great advantage. That the towels should be freshly laundered (not ironed hastily in the back room and brought back for a second service, as is too often the case now) seems only a matter of common decency.—It is not to be hoped, however, that the older, less progressive and more ignorant barbers will adopt these measures of their own free will. They must simply be compelled to take the necessary steps at once, and learn the reasons at their leisure. B.

Dilettanteism in Medicine

As most readers of PEDIATRICS have perhaps heard, Dr. Abraham Jacobi was presented at Atlantic City last June with a loving-cup. The gift was made more notable by the dinner tendered him at the same time by the Pediatric Section of the A. M. A., who were also the givers of the cup.

Perhaps nothing in Dr. Jacobi's thoughtful address of thanks is more noteworthy than the passage following:

"The tendency of our times in meddling with other people's business . . . . The public at large is tempted to engage in the most dangerous dilettanteism of all, viz., that in medicine. The cheapness of yellow or otherwise colored newspapers and the facility with which strictly technical books can be obtained, are a positive calamity. I know that a certain good text-book on the diseases of children, meant for the practitioner and the advanced student of medicine is—to the advantage, I suppose, of the publishers, and of the retailer, who pockets his commission, to the detriment of the public—sold over the counter of a well-known New York milk-shop."

There is an old saw, "Every man who is his own lawyer has a fool for a client." It might read with equal truth, "Every man who is his own doctor has a fool for a patient." What makes the latter case even worse is that parents are tempted to practice not merely on themselves but on their helpless infants, with not infrequently some undesirable or even dangerous result. Even a clinical thermometer in the hands of mother or nurse in the nursery may make a vast deal of needless trouble for the physician and gratuitous woe for the baby. It should be the medical man's advice to his patients, particularly in his family practice, not to do as much, but to do as little as practicable "before the doctor comes." By this means, among the vulgar, the dog-bite will not be so often "licked by the dog that did the biting," nor eczema be treated with urine, nor abscesses poulticed with swine's dung (all of which are *actual remedies* among the classes mentioned); and among the cultivated we shall have fewer cases of collapse from headache powders, belladonna poisoning from "rhinitis tablets," chloral and morphine addictions, and urethral strictures. One wonders sometimes at the temerity with which a layman will deal with his own case of gonorrhea, or a mother trifle with trachoma in her child's eyes, when competent medical advice can be had for a small fee, or if needful for nothing. When the same people in legal trouble are found making straight for a lawyer, the conclusion is compelled that the generality of mankind value their property more than they do life or health. B.

Antitoxin in Tetanus

Behring and Kitasato have established the following points in regard to sero-therapy in tetanus: First, the serum of immunized animals neutralizes *in vitro* the poison of tetanus. Second, preventive injections preserve animals against the toxic effects of the poison. They also endeavored to prove that the antitoxin cures animals when symptoms of the disease have already appeared. This they did not succeed in establishing so satisfactorily. It seems now pretty generally admitted that when symptoms of tetanus are due to the inoculation and development of the germs in the tissues, success depends both upon the quantity of serum injected and the time which has elapsed between the moment of infection and that of treatment. It often fails when animals are so injected that they develop a rapid tetanus. In the human subject, in severe cases of acute tetanus, sero-therapy seems almost futile. In mild cases, when recovery takes place, it cannot be positively abscribed to this substance. The preventive treatment has been very successfully employed in France by veterinarians. Veterinary surgeons, who were accustomed to have epidemics of tetanus among animals upon which they operated, have now succeeded in eliminating this disease almost entirely.

Some continental surgeons do not hesitate to use antitoxin as a preventive when tetanus is prevalent among their patients, and hold that its value when so used cannot be questioned. They say that it produces no ill effects whatsoever.

The explanation of the failure of the action of the antitoxin in declared tetanus is held to be due to the affinity of the poison for the cells of the nerve centers. The antitoxin introduced into the blood will neutralize the poison there present, but is powerless to affect that which has already entered into combination with the cells of the spinal cord and brain. If this combination has not progressed too far by diffusion from nerve cell to nerve cell, there seems to be a greater probability of cure if the antitoxin be injected directly into the nerve centers.

Roux and Borrel claim that in animals a few drops of serum injected into the brain are more certain than large doses injected into the blood or subcutaneously, when symptoms of tetanus have appeared. The antitoxin is powerless to influence the cells of the spinal cord already attacked, but does seem in some cases to prevent extension to the centers in the brain when there injected. There have been a few cases of grave tetanus in man in which this method has been successful. These cases would almost surely have died without this treatment. To be successful it must be employed early, before many centers have been attacked. It is also likely to succeed at a slightly later period of the disease than the subcutaneous method. Of course the poison in the blood should be neutralized and the infection *atrium* ablated. The subject of the various symptoms and treatments for tetanus, with statistics of experiments on animals and a fairly comprehensive bibliography of the subject, is to be found in an excellent paper by M. Ch. Dopter, in *Gazette des Hôpitaux*, April 28, 1900. T.

SOCIETY REPORTS

PHILADELPHIA PEDIATRIC SOCIETY.

Stated Meeting February 13, 1900.

The President, Dr. ALFRED STENGEL, in the Chair.

Dr. J. P. CROZIER GRIFFITH reported a series of cases and exhibited some of the patients.

1. **Congenital Heart Disease with Great Cyanosis and Clubbing of the Fingers.**—The family history is negative. The boy is now 7 years old, although he looks much younger. The parents state that he has been well until very recently, but this is manifestly incorrect. Examination on January 5th disclosed the precordial area not bulging; the apex beat hardly perceptible in the fourth interspace, the cardiac dullness nearly normal except for very slight enlargement to the left. No thrill could be detected. Without reading all the details of the history I may say that there was a loud systolic murmur, which appeared to be loudest over the midsternum, although it was nearly as loud at the pulmonary cartilage. There was also a murmur at the apex, and a faint one at the aortic cartilage. The murmur was transmitted under both clavicles, and heard also to some extent in the back. The pulmonary second sound was decidedly accentuated.

As you can see, the appearance of the boy is very characteristic. The cyanosis is remarkable. The lips and tongue are blue, and often intensely so, and at times he has large purplish areas almost like a bruise on his cheeks. The hands and feet are constantly blue and cold, and the clubbing of the fingers is excessive. I do not think I have ever seen greater clubbing. The child does not seem very bright, but it is difficult to determine this on account of his inability to speak English.

The condition of the child and the character of his murmurs indicate that he must have congenital heart disease. The interesting point it, what form of congenital heart disease is it? I believe the diagnosis can be reached with approximate certainty, although there is always an element of doubt in these cases. As we know very well the experience of nearly all clinicians and pathologists shows that marked cyanosis is dependent oftener upon pulmonary stenosis than upon any other cardiac condition, if we leave out of account transposition of the arterial trunks and other curious anomalies about which we can reach no conclusion whatever and the presence of which we have no reason to suspect in this child. If we have to do in this case with valvular lesions and anomalous openings, it seems to me that the child clearly has pulmonary stenosis. The combination of cyanosis with loud systolic murmur at the pulmonary cartilage constitutes the ground for this belief.

We have still to explain the very loud systolic murmur over the mid-sternum. This is just in the position in which one would expect to discover the murmur of a perforate ventricular septum. The great cyanosis makes us suspect that there is a very decided degree of stenosis of the pulmonary artery. If this is so, the blood must pass from the right to the left side of the heart either through a patulous foramen ovale or through a perforation in the ventricular septum. In the former case we should probably have no murmur produced, although there are exceptions to this rule. This patulous foramen may well be present here; we cannot tell. In any case the loud mid-sternal murmur indicates that we almost certainly have a perforation in the septum.

Finally, if we adopt the belief that the pulmonary stenosis is great in this case, we have to discover some path by which the blood can easily reach the lungs. This is oftenest done by means of a patulous ductus arteriosus. Have we any proof of the existence of such a condition here, as deduced from the physical signs? I think so. It is believed by most clinicians, although not by all, and seems certainly reasonable, that a pulmonary stenosis of high grade must be attended by an enfeeblement of the pulmonary second sound, since so little blood enters the pulmonary artery. Yet this boy has a decided accentuation of his second sound. The only way in which this can well be accounted for is by assuming that the blood under the high pressure of the aorta enters the pulmonary artery through the ductus arteriosus and raises the pressure there to an unusual extent. As a necessary result the pulmonary leaflets close with an unusually loud snap.

I think, then, that the natural diagnosis of the case is, pulmonary stenosis, perforate ventricular septum, patulous ductus arteriosus.

2. **Cases of Spastic Diplegia with Choreiform Movements.**—I show you a patient with the following history:

The father and mother are living; two brothers and two sisters are also living. This child was born after a hard labor, and is now four years old. When she was 6 months old the parents first noticed a peculiar movement of the head and arm. She was brought to the Children's Hospital last November.

Your inspection of the child shows you a condition which speaks for itself. You will notice the nearly constant ataxic or choreiform movements, or a movement half way between the two —of the arms and the head, with a tendency to grimaces of the face. She can grasp one's finger, although with some difficulty and after several efforts. She cannot talk at all, and her intelligence seems decidedly deficient. The knee-jerks are slightly increased. There seems to be no actual loss of power; the muscles are very fairly developed; there is great rigidity of the greater part of the body.

She is an example of that class of cases which is puzzling unless one is on the watch—the cases of spastic diplegia with choreiform movements. The condition is interesting chiefly because it simulates other affections and leads to errors in diagnosis. Indeed, a diagnosis of Friedreich's ataxia had once been made in this case. Something happened to the brain of this child, perhaps at birth, perhaps before it, although nothing was noticed by the parents until the baby was 6 months old, This is the usual history of cases of this kind. What the actual cerebral condition of this child is, no one can tell. There has probably originally been a meningeal hemorrhage followed by an encephalitis or a porencephaly.

3. The next case of this condition which I had intended to exhibit is too ill to be brought here to-night. It is that of a little boy with a history to a considerable degree similar to the one reported. The child is said to be a year and a half

old, but in appearance it is not much more than infantile. There is a peculiar tendency to regular, rapidly repeated, jerking movements of the jaw. If one places the finger over the articulation it is felt that the jaw is being thrown partially out of place and back again. Combined with this movement there are irregular slow movements of the fingers, and apparently purposeless incoordinated movements of the arms. There is slight stiffness of the neck, and an irregular intermittent arching of the back. There does not appear to be any actual paralysis. The child is distinctly an idiot. The face and head have the peculiar appearance of the Mongolian type. The tongue is constantly being protruded and the lips pouted. We certainly have to do here with a spastic, choreiform condition resembling the last.

4. I have now under my care another child suffering from similar disorder of motion, but with mind, I hope, unclouded, although this is not quite certain. When I first saw it at the age of 17 months it was enormously ataxic. It could not walk, nor stand, nor even turn itself in bed, although there was no loss of power in its irregular movements. It could scarcely grasp an object put into its hands. There was no increase of knee-jerk. When lying on its back there was no adductor spasm of the legs, although when held upright with its feet touching the bed there seemed a degree of cross-legged progression. All the child's movemenrs, however, were rather ataxic than spastic. The incoordination was nearly absolute. It has now for seven months had daily massage and Swedish movements, and the improvement has been decided. It has learned to walk to some extent with a baby-jumper. It can stand when steadied slightly, and can grasp objects very much better than formerly. It has learned to say a few words. I am inclined to believe in this case that the inability to talk better is a motor trouble, for the baby shows every evidence of understanding what is said, and of being very fairly bright.

5. In this connection I may refer to the case of a woman who has had the disease from infancy and who has been an inmate of the Philadelphia Home for Incurables for fully twenty years. Apparently, so far as can be learned, she is mentally sound, but she has the most violent and uncontrollable contor-

tions of the whole body, particularly when addressed or excited in any way. She cannot speak a word, but by curious violent ataxic movements of the arms she will indicate what she wants and what she feels. For instance, after excessive waving of her arms she can finally get her hand to her abdomen or chest, accompanying this by peculiar grunts to indicate that she has a pain there. It is also possible to discover when she has sensations of pleasure. Other inmates of the Home, who see her constantly, are convinced that her mind is clear, and I believe they are right.

6. **Stenosis of the Larynx in Typhoid Fever.**—The last case I have to exhibit is a patient convalescent from stenosis of the larynx in typhoid fever. The child, a boy of 9 years, was brought to the Children's Hospital, November 16th, at the end of the first week of fever. The disease ran an ordinary course until about the middle of December, when the temperature rose considerably and remained so without discoverable cause. Toward the end of the month there was suppuration of the middle ear, a profuse discharge from the nose, and increasing hoarseness. The case was supposed to be one of diphtheria developing as a sequel. Laryngeal stenosis became so great that intubation was constantly impending. There was almost complete deafness. Repeated cultures failed to show the presence of Klebs-Loeffler bacilli. The child was extremely weak and ill, but gradually improved, and the stenosis slowly lessened. Cultures still showed no germs of diphtheria. An attempt at laryngoscopic examination was made by Dr. N. J. Freeman during the height of the attack, but was unsuccessful, owing to the serious condition of the child. A second examination was made on January 15th, while stenosis was still present, but lessening. This showed edema of both arytenoids and swelling of the left ventricular band and of the right vocal cord.

I believe we have an instance here of laryngeal stenosis due to typhoid fever. Whether or not there was anything more than edema at first cannot be known. These cases of stenosis in typhoid fever occur from time to time, and we find considerable number recorded in medical literature. Yet in individual experience of most physicians they are certainly rare.

DISCUSSION.

Dr. F. A. Packhard.—The young colored boy came under my care at the time of the development of the laryngeal symptoms. The boy first began to be hoarse; I got Dr. Freeman to see him. The larynx was white with a mucopurulent discharge from the nose. In spite of the fact that the cultures were negative, the case was sent to the tracheotomy room because Dr. Freeman said the membrane was so suspicious of diphtheria that he thought the case ought to be isolated. My impression is that it was either a perichondritis of the larynx or possibly a simple typhoid ulceration of the larynx. This, of course, would not explain the rhinitis. The presence of the rhinitis in addition to the laryngitis made me feel, in spite of the negative cultures, that the case ought to be isolated.

Dr. Jopson.—I should like to mention, in connection with this case, one which I saw with Dr. Griffith two years ago. A colored infant a year and a half old came into the Children's Hospital in April of 1898.

The temperature ranged from 101° to 102° F. for two weeks. Two examinations of the blood for the Widal reaction were positive. The temperature declined gradually, reaching normal, when the child developed sudden severe laryngeal obstruction and the fever returned. I intubated the child with immediate relief. Cultures taken from the throat were negative. The child died the following day with symptoms of central respiratory failure. An autopsy was not made for several days, but when permission was given an examination of the larynx was absolutely negative. The obstruction had probably been due to edema, as there were no signs of ulceration, membrane, or infiltration. The pathologic findings in the intestine at that time were not in accord with the diagnosis of typhoid fever. Whether it was a case of typhoid fever with absence of ulceration, I cannot say. It is the only case in which I have seen laryngeal obstruction dependent upon typhoid fever or any similar condition.

Dr. L. J. Hammond.—In regard to the cerebral cases reported by Dr. Griffith, I should like to emphasize the fact that trifling injuries in children may later on give rise to symptoms of cerebral character. It is therefore important, if we are to expect any treatment to be beneficial after the reception of an injury of this kind, to explore, especially if acute symptoms are followed after a few days or even weeks by great irritability, hebetude, anorexia, change in pulse and temperature, and especially where the motor areas are involved. This alone can furnish us with a diagnostic guide. Upon trephining, it will frequently be found that adhesions bind the membrane to the brain or to the bone. The exudate which follows upon these trifling blows may remain latent for a long period and eventually give rise to conditions which Dr. Griffith has spoken of this evening. Early trephining for minor injuries should certainly be instituted, when a period of latency after either injury or disease of ears, nose, or eyes is followed by brain symptoms.

Dr. Augustus A. Eshner exhibited "**A Case of Mitral Regurgitation and Pulmonary Obstruction**" in a girl eight years old, who gave a previous history of measles and sore throat. She presented displacement of the apex beat of the heart to the left, an increased area of percussion-dullness, a loud systolic murmur at the apex, transmitted to the axilla, a rough systolic murmur and an accentuated second sound at the left base.

Dr. G. G. Davis exhibited a case of **Double Congenital Luxation of the Hips**; One Replaced by Manipulation and the other by Operation.

The patient shown was a little over 5 years of age. She started to walk when 9 months old. It was noticed that her gait was unnatural, and as she grew older her back became hollow, and her buttocks prominent. At the age of 3½ years, or after she had been walking for 2 years and 9 months, she came under Dr. Davis's care at the Orthopedic Hospital. She was then found to possess the marked waddling gait of this affection. Lordosis was quite marked, the hollow in the back being pronounced. Both trochanters were well above Nélaton's line. In standing, she did not hold herself perfectly erect, but slightly flexed both the hips and the knees. Ether was administered, and tenotomy of the adductors of both thighs performed. Then by manipulation both femurs were restored to their sockets. The luxations being both dorsal ones, the limbs were put up in plaster of Paris in an abducted and outwardly rotated position. They were so kept for six weeks, and on examination the right hip was found still in position, while the left was again out. The right leg showing a tendency to inward rotation, a silicate of soda dressing, with an iron strip was applied to keep it in proper position. Extension was applied to the left hip. The patient then had an attack of measles, and about six months after the right hip had been replaced, the left was again put in place. An incision was made down to the capsule, which was gathered together, and sewed with three chromicized catgut sutures. The wound was packed with gauze. It was thought that perhaps enough contraction might be produced in the capsule to hold the bone in place. On removal of the plaster cast six weeks later, the hip was found to be again out of place, so two months afterward, the joint was opened, and a fairly well developed femoral head was found. The capsule was stretched, and the acetabulum was discovered to be nothing more than a flat surface about the size of a thumb nail. By means of a gouge and roseburr (for a description of which see *Trans. American Orthopedic Association*, 1899) a new acetabulum was formed, and the head of the femur placed therein. About two months after this operation, a belt with perineal straps was fitted around the trochanters, and the patient was allowed to walk about. Shortening on the operated side was about a quarter of an inch. A skiagraph, taken by Prof. Goodspeed a short time after, showed both hips in place. At the present time, eleven months since the last operation, and a year and ten months after the non-operative replacement of the right hip, she walks with a slight limp. The shortening amounts to half an inch, and she has lost entirely the waddling gait. The back is now straight, the lordosis having disappeared. About three months ago, she had an attack of scarlet fever, and since that time has not worn her hip belt, nor any apparatus whatever.

DR. BERTHA LEWIS.—I have a similar case in private practice but the patient would not consent to be exhibited before the society. I have the skiagraphs which show the dislocation, more marked in the right hip than in the left. The left hip shows a wide acetabulum and no close juxtaposition of the head of the femur with the acetabulum.

As Dr. Davis says, the gait is so characteristic and the lordosis in these cases is so marked, that it seems incredible that any one at all familiar with orthopedic work should have failed to make a diagnosis, and yet this case has been seen by a dozen physicians, including two surgeons, without the proper diagnosis having been made. The case had been diagnosed as pseudo-muscular hypertrophy, and was for thirteen months in the hands of an electrician, being treated for that disease.

I congratulate Dr. Davis upon his result. I should like to ask whether in the after-treatment he applied a plaster cast to retain the position after replacement.

Dr. Davis.—After the replacement by manipulation the limb was placed in an abducted position with the legs rotated somewhat outward. This position was maintained for a considerable length of time. A strong elastic hip bandage was adjusted, coming around the crest of the ilium and over the trochanters, being prevented from rising by two perineal bands. This was the only support she ever wore. It was worn until three months ago, since which time she has not worn any apparatus.

Dr. A. M. Seabrooke reported a case of **Hemorrhagic Purpura in a New-born Infant.**

No discussion.

Dr. F. A. Packard read a paper entitled "**A Brief Note on Kernig's Sign.**"

DISCUSSION.

Dr. D. L. Edsall.—I have seen one case, which may be added to the list, in which meningitis was proven by autopsy to have been present, but Kernig's sign was absent. A child, 2 years of age, was admitted to my service at St. Christopher's Hospital with a diagnosis of tuberculous meningitis. The case had the usual appearance of this affection, but it ran a protracted course. Kernig's sign was absent every day. The child died about six weeks after coming into the hospital with signs of acute internal hydrocephalus, and the autopsy showed marked internal hydrocephalus with unquestionable tuberculous meningitis. The possible contrary fallacy that the sign may be present without meningitis was exemplified by another case, that of boy of 6 years, who showed high temperature and violent delirium at first, but afterward ran a typical course of typhoid fever. Kernig's sign was present from the boy's admission to his convalescence and was very marked. He had no other signs of meningitis and even examination of the eye grounds was negative.

Dr. Alfred Stengel.—I recall two cases of meningitis confirmed by autopsy in which Kernig's sign was absent, and I should also like to state that I have found this sign a number of times in cases which were unquestionably not meningitis, though not confirmed by autopsy, as the patients recovered.

I agree with Dr. Griffith in questioning the admission, in a group of cases supposed to present Kernig's sign, of any case in which there was general rigidity of the limbs, and therefore stiffness and inability to extend the knee in any position.

Dr. McKee.—I saw an interesting case last summer in which I think there was unquestionably meningitis with the presence of Kernig's sign. There was a very bad family history; two children had died from hydrocephalus, and there had been a number of abortions and miscarriages. The child had been practically well up to the time she was 9 months of age, but she was considered decidedly under-sized. At that time the head commenced to enlarge very decidedly. When I first saw her she was 17 months old. The mother stated that for some weeks she had peculiar movements of both arms and stiffness of the legs. She also had fever and was fast becoming blind. She had very curious movements (clonic spasm) of both hands and arms (usually two or three rhythmical movements per second). This fact struck me as being of decided interest, since it has been claimed that from the motor cortex we may have from two to four discharges per second. We had her in the Polyclinic Hospital for about eight weeks, and during that time Kernig's sign was present. The more acute symptoms disappeared under specific treatment (rapidly increasing doses of the iodids.) Two months after her return to Allentown, I had a note from her doctor, telling me that she was much better; but he told me nothing definite regarding her symptoms. I believe this was a case of meningitis, probably specific, and almost unquestionably of the cortical type.

Dr. **Packard** closes: I agree with the criticism that it is not fair to call Kernig's sign simple inability to extend the leg on the thigh. Kernig states that if you lay the child down, and flex the thigh on the abdomen, it can extend the leg; but that if you sit the child up in bed, and then flex the thigh on the abdomen, it cannot extend the leg, although it could do so when lying down. I have seen during last year a considerable number of cases of cerebrospinal meningitis, in which Kernig's sign was reversed, that is the leg could be extended when sitting up, while there was inability to extend it when the patient was lying down. There is a man in town with whom I have often talked over Kernig's sign, who has shown me how absolutely impossible it is for him to get his leg anywhere near in line with his thigh when he is sitting up. As soon as he gets beyond a slight degree of extension, it at once gives him pain. This man has no meningitis whatever. I would not, however, by any means desire to be thought making light of Kernig's sign. I believe it is a good sign as an aid when other signs are not positive. I believe its absence in infants is easily explained by the condition of normal hypotony in young babies.

The question of particular importance is the fact that the absence of Kernig's sign might possibly make us err in thinking that the case was not one of meningitis, but simply one of meningismus, a diagnosis otherwise often extremely difficult to make.

Crusts and Fissures of the Nostrils.—

℞	Ointment of white precipitate	āā 150 grains.
	Boric Vaseline	
	Ozide of Zinc	75 grains.
	Acetate of Lead	¼ of a grain.

M. For external application.

Goz. Hebdomadaire, Practitioner.

AMERICAN MEDICAL ASSOCIATION—SECTION ON DISEASES OF CHILDREN.

(*Continued.*)

ANNUAL MEETING, ATLANTIC CITY, N.J., JUNE 5 TO 8, 1900.

Second Day, June 6, 1900—Afternoon Session.

Dr. ANNIE S. DANIEL, of New York, read a paper entitled **A Case of Fatal Fetal Ichthyosis**, prepared by her in conjunction with Dr. Cordes. The child's mother was a strong, healthy woman, 30 years old. The family history was negative so far as syphilis, alcoholism and tuberculosis were concerned. The father was 40 years old, strong and healthy. The woman had four pregnancies previous to this last, and one miscarriage. No history of maternal impressions obtained. The child was born within two weeks of the expected time, the exact duration of pregnancy unknown on account of absence of date of last menstruation. The child was born easily, and was delivered by a midwife on October 17th. The mother recovered without any incident.

The child was first seen 5 hours after birth, and had passed both urine and meconium. On admission it was wrapped in cotton after having been anointed with oil. It emitted a continuous, rather piercing cry of distress. Sleep was almost impossible. Any jar or exposure increased the crying. The respirations were irregular. The whole surface of the body was cold, and hot water bags did not warm it. The child could not suckle and swallowed milk from a dropper very imperfectly. It died suddenly, 27 hours after birth. The temperature taken immediately after death was 103° F. During life the body was always cold and stiff, and the extremities in the fetal positions.

The skin seemed too small for the body, and so stretched that it had been torn in some places; purple or yellowish-colored slits or fissures partly or completely through the skin were found in these places. The skin was leathery, inelastic.

The author reviewed the cases of this rare condition reported in literature, and read the report of the autopsy. The latter showed, in addition to ichthyosis, cephalhematoma, meningeal hemorrhage, atelectasis, congestion of the internal organs. On bacterial examination it was found that the child had suffered from a general infection by a germ of the colon group. On microscopic examination the skin showed the following lesions:

(1) All the layers of the epidermis, save the stratum granulosum are thickened. (2) The corium is edematous and contains less elastic tissue than normally. The papillæ of the corium are hypertrophied and their bloodvessels are widely distended. (3) The sweat-glands are in some places markedly increased in number, but are normal in structure. (4) The sebaceous glands are normal in number, but their ducts in some cases and occasionally their secreting portions show degenerative changes, the arrectores pilorum muscles are well developed. (5) The panniculus adiposus is everywhere poorly developed, being almost absent in places.

Dr. E. H. SMALL, of Pittsburgh, Pa., reported a case of **Gastrointestinal Hemorrhage in the New-born.** The child was delivered by forceps and the cord cut 5 minutes after birth. When the baby was 31 hours old she vomited and passed by the rectum some material which looked like meconium mixed with blood. Two hours later quite a profuse discharge of almost pure blood occurred, which was repeated after two hours; the baby by this time was in a state of collapse, cold extremities, scarcely perceptible pulse. He gave her morphine sulphate 1/150 grain and 1/6000 grain atropia; warmth to the extremities, albumin water and brandy by mouth. The child was wrapped in cotton. Four hours later a third profuse hemorrhage left the baby practically bloodless. Six hours later she passed a few dark clots, and the hemorrhage ceased from that time. Her condition was desperate, but gradually improved, and on the next day she passed normal stools. In commenting upon the case, the author said that of the causes given for the production of intestinal hemorrhage in the newly-born—asphyxia, tardy establishment of the respiratory and circulatory functions, too speedy ligature of the cord, slow and difficult labor—few were present here. It was possible that the trouble was infectious, as so many cases occurred in institutions. At present the results of bacteriologic examinations were very much confused, but they all seem to point to a specific cause. The prognosis was bad, the mortality varying from 35 to 79 per cent. As regards treatment, the hypodermic use of morphia seems to be of more use than anything else.

3. Dr. W. E. Darnall, of Atlantic City, read a paper entitled **The Signficance of the Stool in Infantile Diarrheas.** The writer emphasizes the importance of an examination of the stool in all cases of infantile diarrhea, as this gives us more than anything else a clue to the condition of the intestinal tract. One should not intrust the inspection of the stools to mothers. The author described the various physical characteristics of the stools in diarrheal conditions of infancy. The brown muddy stool which may change to an ashy-gray indicates the presence of toxic substances in the intestine. The green stool is due to an excess of carbohydrates in the food. The watery stool is a serious symptom. The mucous stool indicates some inflammatory condition of the intestine. The presence of blood in these stools indicates colitis, or some affection of the rectum. Whitish or grayish stools testify to an excess of fat and inactivity of the liver. The dry pasty masses which are are present in constipation denote the deficiency of fat.

The treatment of these diarrheas consists of (1) elimination (2) disinfection (3) feeding.

4. Dr. C. F. Wahrer, of Fort Madison, Iowa, read a paper entitled **Shall Children be Kept from Measles and the Exanthemata Usually Incident to Childhood?** In speaking on the subject he included pertussis and diphtheria, though they are not exanthemata. The question which he considered was whether a child should be kept away from children who have measles, or whether it was better to allow children to get infected with a mild form of the disease, and thus avoid the severer form of measles of adult life. He would expose all children above 2 years and under 12 to a mild epidemic of measles, as measles ever so mild was prophylactic against any future exposure.

(*To be Continued.*)

FOREIGN PEDIATRIC JOURNALS.

Abstracts of all Original Articles Appearing in Foreign Journals Devoted to Pediatrics

KINDERARZT, May, 1900.

1. **The Care of the Newly Born 200 Years Ago.** By Dr. J. H. v. Spiegelberg.—The writer reproduces selections from a little book written in 1689 by Justina Sigmundin, a midwife. Justina emphasizes the necessity of securing movements of the bowels and passage of the urine, of seeing that the tongue is not tied, and speaks of massage of the abdomen as a remedy against flatulence in infants, and massage of the breast as a treatment of caked breast.

2. **Concerning Newer Remedies and Foods in the Treatment of Tuberculosis.**—By Dr. G. Schroeder. (Reprinted from *Zeitschr. f. Tuberculose und Heilstaettenwesen*, Bd. 1, Heft 1). Among the newer sedatives he mentions Dionin and Heroin. The former can be used in doses of from 1 to 3 centigrams, but heroin is always to be employed with caution, the maximum dose being five milligrams. Heroin depresses the respiratory center and small doses render respiration deeper and less frequent. Symptoms of collapse, nausea, dizziness, etc., have been observed, even after small doses, and should serve as a warning against unscrupulous dosage. For the dyspnea we may try oxy-camphor, 0.5 three times daily, in powders, or iodipin, a teaspoonful three times a daily. The latter is a combination of iodin and oil of sesame that does not disturb digestion and does not produce toxic symptoms. For the fever the antipyretics should be used, without any expectation of marked effect. Among the newer ones are citrophen and aspirin and the sulfoderivatives of phenacetin and antifebrin respectively, phesin and cosaprin. For the night-sweats applications of formalin and alcohol (equal parts of a 40 per cent solution of formalin and absolute alcohol painted on with a brush) are recommended. No really efficient stomachic exists, so far as we know, for the persistent anorexia of phthisis. Validol, a compound of menthol and valerianic acid, is lauded by some, while vanadium has been used by others. Against the diarrhea de Renzi recommends the use of iodoform and tannin, against constipation iodotorm and naphthalin. Many artificial foods have been prepared of late for the purpose of improving the nutrition of tuberculous patients. Of these, plasmon and eulactol are inexpensive and useful. Cod liver oil has lately been given in enemas of 20 to 30 cc. in patients who could not bear it by mouth.

Subcutaneous injections of gelatin were used with encouraging results in hemoptysis by Lancereaux and Paulasko. A 2 to 3 per cent solution of gelatin in sterilized normal salt solution is prepared and from 50 to 200 cc. are injected subcutaneously. In Germany this method, as well as the internal use of gelatin, has been employed for hemoptysis, and the results encourage imitation.

Among the specific remedies against tuberculosis, thiocol has been widely discussed. It is easily taken and readily absorbed, but whether it is valuable is as yet an open question. Sulfosote and its syrup have similar advantages. Fluoroform solutions have been successfully used locally in lupus in the hands of Stepp. Injections of formalin solutions in glycerin were used with good results by Hahn in surgical tuberculosis. Green praises the inhalation of formalin vapor or spray.

3. **Concerning Tannocol, A New Intestinal Astringent.** By Dr. GOLINER. (Reprinted from the *Medicinische Rundschau*, No. 55, 1889). An efficient intestinal astringent must not be absorbed in the stomach, and must be slowly soluble in the alkaline secretion of the intestines, so as to reach the lower part of the bowel. Tannocol is a combination of tannin and mucilage. The latter prevents the absorption of the tannin into the blood and its conversion into gallic acid. The dose for a child of 2 to 6 years is from 0.3 to 0.6. Tannocol acts as a powerful astringent and is very efficient in infantile diarrhea.

ANNALES DE MEDECINE ET CHIRURGIE INFANTILES, May 1, 1900.

1. **Radiography in the Mouth of Infants.** By Dr. ROUSSEAU.—The writer reports a case which illustrates the use of the X-rays in buccal surgery. The history of the case was as follows:

A boy, aged 7½ years. The upper central incisor of the right side is normally developed but very large. The two left incisors have persisted from the first dentition. Thus, between the canines there are five teeth, three on the right, two on the left. Peculiar expression of child's face. Mother brought him to hospital on account of retarded dentition. The upper jaw was photographed with the X-rays, and the result obtained is shown in the illustration.

The teeth are seen from behind forward, from the palate to the exterior.

A, central incisor; B, included central incisor; C, lateral incisor; D, canine; E, incisor of the first set, the root of which has been absorbed; F, incisor of the first set with persistent root.

The photograph therefore shows that the cause of the arrest of development of the teeth in this case was due to the persistence of the root, F, and that the indication was to extract E and F. This was done, and the central incisor appeared a few months later. The regularity of the teeth is restored and an anomaly has been avoided by the use of radiography.

2. **Serum Diagnosis and Fibrin Diagnosis.** By Dr. G. ROSENTHAL.—The writer speaks of the frequency with which the Widal test proves disappointing, and urges the employment of Hayem's fibrin test. This has been described in Hayem's book on the blood, and in the treatises of Par-

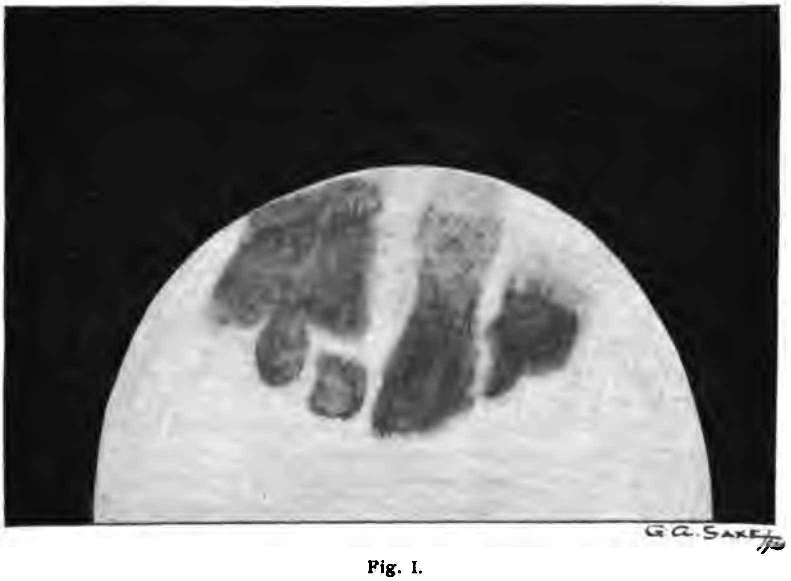

Fig. I.

The following diagram shows the relations of the teeth shown in the radiograph.

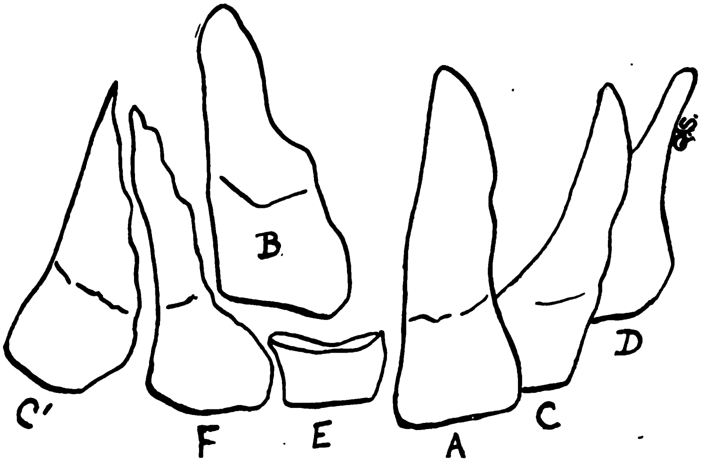

Fig. II.

mentier and Bensaude. A drop of the patient's blood is prepared in the hanging drop slide in the usual way. If a suppurative process be present there will be formed thick bundles of fibrin between the rouleaux, whereas in normal blood there will be but a scarcely perceptible deposit of fibrin filaments. In typhoid fever, therefore, this test will be negative, while in pneumonia, for instance, there will be a positive fibrin reaction. The test, therefore, is only useful in cases where clinical diagnosis has left us in doubt whether we have to deal with a suppurative condition or a non-suppurative process. Thus, this test will be feund useful in connection with the Widal test, though it has not the specific differential value that the serum test possesses.

3. **A Case of Cerebrospinal Meningitis; Lumbar Puncture; Death; Autopsy.** By Dr. SINCLAIR GILLIES.—The patient was a girl, aged 6 years, who presented the symptoms of cerebrospinal meningitis. Lumbar puncture showed the presence of the meningeal diplococcus intracellularis of Weichselbaum. The child died six weeks afterward of exhaustion. The autopsy showed dilated ventricles filled with fluid, flattened convolutions and thickened basal pia mater. Postmortem culture with pieces of the meninges did not show diplococci. The case is interesting as showing the diagnostic value of lumbar puncture.

In this case the puncture was repeated several times, at intervals of a few days, with the effect of lessening the severity of the symptoms, but the child ultimately died of hydrocephalus. The occlusion of the foramen of Magendie by thickening of the arachnoid, was, no doubt, the cause of the disappointing result. The disappearance of the diplococcus before death is also a notable feature of the case.

4. **School Hygiene.**—By Dr. DELOBEL—The writer continues his treatise on the hygiene of the school-child, and devotes this essay to the moral hygiene of children. Some of the topics considered are the distinction of good and evil, discipline, school libraries, temperence, and good habits taught in school, punishments and rewards, supervision, masturbation. Although he does not present anything new, the subject matter is treated in a very concise and systematic manner.

5. **Emetics.** By Dr. COMBY (reprinted from the recently published book of Comby). Among the most useful ones he mentions ipecac, copper, sulfate, tartar emetic, and apomorphine.

6. **Some Remarks Concerning the Use of Decalcified Bone.** By ARBUTHNOT LANE.—The writer reports a case in which he has used large quantities of decalcified bone. The patient was a boy, aged 10 years, who had a fistulous opening in the thorax following the rupture of an empyema. The abscess cavity was cleaned and the space between the thickened pleura and the chest wall filled with decalcified bone to replace necrosed ribs.

The writer speaks of the numerous cases in which he has used decalcified bone to fill up cavities in necrosed bone, etc., and says that he has used this substance successfully in tuberculous osteitis. He reserues the use of iodoform pencils to cases in which the tuberculous process is far advanced in the lungs. (Reprinted from the *Clinical Journal*, January 17, 1900).

7. **Treatment of Severe Cases of Scoliosis in Adolescents.** By Dr. GOURDIN.—The indications are to diminish the rigidity of the spine and its lateral curvature, the thoracic deformity and the posterior costal angle. The writer uses Sayre's suspension apparatus for the ordinary cases and for the advanced cases a traction-apparatus, with or without anesthesia. The thoracic deformity is treated by manual pressure in the direction opposed is that in which the spine is curved while the patient is suspended in the apparatus. To diminish the costal angle he employs the apparatus of Lorenz-Redard and a modified form of the appliance of Barwell. In order to retain any gain in position he applies a plaster of Paris jacket in the intervals between the seances with the apparatus. From his experience with 56 cases which he treated, he concludes that in all cases, however far advanced,one can arrest the progress of the deformity and lessen the pain. In more than half the cases considerable improvement can be obtained. In one-tenth of the cases complete cure is possible. It is impossible to predict at the first examination how much can be done for the patient.

PEDIATRIA, May, 1900.

Concerning Sublingual Growth, or Riga's Disease.—By IGNAZIO CALLARI. This affecrion, which is characterized by a growth situated at the frenum of the tongue, has occupied much space in recent Italian pediatric literature. Abstracts of articles on this subject have appeared in these columns during the past few months.

The growth, says Callari, is often mistaken for other sublingual lesions,especially for ulcers of the frenum,due to dentition or to pertussis, but though Fede's growth may be connected with the eruption of the lower incisors, it is a separato morbid entity.

The growth may occur in perfectly healthy children (Fede's first form) but more frequently it occurs in rachitic infants, the cause of the cachexia being usually gastroenteritis. It is a question whether this growth is a cause or effect of the cachexia. The author maintains that the growth is a purely local disease, that the traumatism produced by the eruption of the lower central incisors only acts as a predisposing cause, that the type described by Cardarelli and Pianese (infections accompanied by swelling of liver and spleen, seem to be effects of cachexia) is different from that described by Fede, and that the presence of cachexia is only accidental in the latter form.

The clinical features of the growth are as follows: It is a small tumor varying in size from that of a pea to a coin of 50 centisimi, pearly-white in color, bloodless, circumscribed, growing slowly and not involving the lymphnodes. In the writer's cases (10 in number, 6 males 4 females, ages ranging from 4 to 14 months) it began as a small, whitish, opaque spot; gradually it took the shape of a small, hard button, pearly in color, fibrous, sometimes with a depression, sometimes umbilicated. The margins are harder than the center and the base is hard and fibrous.

Salivàtion and difficulty in nursing are noted in the infant. In some cases severe gastrointestinal symptoms coexist. The course is slow. If left to itself it does not get well, but tends to grow larger. If the tumor is well excised the scar heals in 10 to 15 days.

The pathology of the growth gave rise to great deal of discussion. Two cases were examined for the writer by Phillipson, and it was found that the growths were fibromas, growing in the submucosa of the region of the frenum. There were no traces of inflammation, except at the upper surface of the tumor where there were degenerative changes of the type of coagulation necrosis.

The author concludes that the disease is simply a local condition, a deformity or malformation, and not a general disease as stated by many other observers.

2. **Three Cases of Sublinguinal Growth, or Riga's Disease.**—By Nicola Fedele. The writer agrees with the conclusions of Fede concerning the nature of this affection. The three patients were over 7 months old and had fully developed lower central incisors. We notice that two of the children were natives of Austria, but as the nationality of the parents is not given—they were probably Italians—no conclusions can be drawn as to influence of race on the causation of the trouble. Excision, repeated if necessary, and cauterization of the stump with a solid stick of nitrate of silver effected a cure in all three cases.

REVUE MENSUELLE DES MALADIES DE L'ENFANCE, MAY, 1900.

1. **The Exanthematous Form of Typhoid Fever in Children. (Abundundant Rose-colored Spots.)**—By Dr. E. Weill and Dr. Ch. Lesieur. A study of certain number of cases of typhoid fever has convinced the writers that there is a certain relation between the character and severity of the case and the abundance of the exanthem, and though this relation is by no means absolute and constant, they found that the cases characterized by an abundant eruption are milder so far as the intestinal symptoms are concerned, and therefore in general terms have a better prognosis. The authors classify all their cases of typhoid fever into the following groups:

1. The classic type with all the typical symptoms and with a variable prognosis, always serious, always grave.
2. The mild cases with both enanthem and exanthem of mild type and with favorable prognosis.
3. Severe cases, directly opposite to the mild.
4. The purely exanthematous cases that are the subject of the present study.

These are subdivided into four sub-groups, namely, the benign, the malignant, the intermediate, and the relapsing, according to the presence and degree of intestinal and cerebral symptoms.

The rosaceous spots must be considered as an evidence of the activity of the toxin of Eberth's bacillus. While their presence in great abundance does not exclude the coexistence of severe intestinal and general symptoms, nor the scarcity of the spots the coexistence of mild symptoms, there is a certain coordination of the eruption to the other manifestations of the disease which often enables one to judge the severity of the case.

Opinions of authorities vary considerably on this question. The writers base their statements upon a study of 280 cases of typhoid fever in children, in which the eruption was particularly abundant or of average quantity. They found that abundance of the eruption, mildness of the intestinal symptoms and benignance of the prognosis were usually associated in these cases.

Of the 280 cases 73 had very abundant exanthems, and of the latter only 15 had digestive disturbances worth noticing. Of the total number 73 patients had no noteworthy intestinal symptoms, and of these only 15 had insignificant eruptions. In the exanthematous form without diarrhea the mortality was nil, while the non-eruptive cases showed a death rate of 6,28 per cent. The exanthematous form is not rare,(the writers having collected 59 cases out of the total 280, or 20,71 per cent), and therefore is noteworthy as a clinical type of the disease which must be distinguished on account of the prognostic significance.

2. **Endopericarditis in the Course of Typhoid Fever.**—By Dr. Guinon. The writer reports a case of typhoid fever in a girl aged 15 years. During the first week of the disease there appeared tachycardia, exaggeration of the intensity of the heart sounds, signs of dry pericarditis, then of pericarditis with effusion. After a few days endocarditis developed and took the form of mitral insufficiency; the myocardium was weakened, the pulse became rapid and weak. The rational symptom was a persistent pain in the epigastrium, aggravated on pressure, lessened by applications of ice. The respiration was rapid, without any subjective discomfort. The heart had been perfectly normal before the illness, according to the statement of the family physician. The endopericarditis in this case was therefore a complication of typhoid fever.

3. **Subacute Tuberculous Ulcers of the Pharynx and Larynx.**—By Dr. Froin. The patient was a girl aged 14 years, and was brought to the hospital for tonsillar angina. Chief complaint was sore throat and fever. She was pale and emaciated. The tissues in the throat were swollen and secreted pus (?) and bacterial examination showed presence of pneumococci and streptococci. The submaxillary glands were swollen. After a few days the odor of the breath became fetid, deglutition painful, and ulcers of various sizes and degrees of depth were found on the soft palate, fauces and tonsils. Tubercle bacilli were found in the secretion of these ulcers, and the diagnosis of pharyngeal tuberculosis was made. The treatment consisted of carbolic acid and boric acid irrigations and syrup

with carbolic acid internally. Three days later examination of the ches showed involvement of both apices and sibilant breathing all over the chest, although there was no cough. The child's father was found to be tuberculous. A week later the ulcerations extended, the mucous membranes became paler, the tonsils became hard to the touch and covered with grayish tubercular granulations. The pain in deglutition became intense and extended to the ears, but the ulcers themselves were not sensitive. There was albuminuria and a mild febrile movement. Ice was applied to the throat and carbolated glycerin dropped into the ears. These conditions continued for two weeks until a purulent discharged appeared at the left auditory meatus. The condition of the throat remained stationary, but the pulmonary symptoms got worse. The child lost flesh and strength rapidly, and died six weeks after admission. The autopsy showed tuberculosis of the lungs, cavities at both apices and extensive involvement of both sides, especially the left. The ulcers spread to the larynx and invoved the epiglottis and the false cords. The kidney showed a tuberculous focus.

4. **Almost Uncontrollable Vomiting in a Case or Rhinopharyngitis and Adenoids.**—By Dr. Breton, The patient was a boy aged 5 years. The vomiting was frequent and severe. On examination the stomach, cecum and colon were found distended. The child gradually lost strength, as almost everything he ate was rejected. Examination of the throat showed adenoids, enlarged tonsils, and of the nose the presence of chronic rhinitis. The nose was treated, the adenoids were removed, and the vomiting ceased. A relapse of the rhinopharyngitis brought on a relapse of the vomiting. All symptomatic treatment of the vomiting had been without avail.

5. **A Case of Dislocation of the Lateral Peroneal Tendons.**—By Dr. Mayoud. These cases are rare. Tillier in his recent article has been able to collect only 25. The patient was a boy, aged 7 years, sustained a severe injury of his left foot by a heavy stone. He presented the signs of infantile paralysis in that member. The two lateral peroneal tendons were found dislocated and crossed the external surface of the malleolus. They could be returned to their normal position, but not maintained thus. Arthrodesis of the tibiotarsal and astragaloscaphoid joints was performed. The patient still wears his foot in plaster of Paris. It is difficult to say what was the etiology of the luxation of the peroneal tendons, but probably the traumatism had nothing to do with it, for the sheath of the peroneals was not torn, only enlarged. The luxation was probably due to the paralysis.

PEDIATRICS

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VOL. X. SEPTEMBER 1st, 1900. No. 5

ORIGINAL ARTICLES

ON ENURESIS AND "IRRITABLE BLADDER" IN CHILDREN.*

By FREDERIC BIERHOFF, M.D.,
Berlin, Germany.

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THAT these conditions are not, in by far the greater proportion of the cases, pure neuroses, but manifestations of local changes in the urethra or bladder, many clinicians who have investigated the subject will, I believe, admit. I have chosen to classify them under the one heading, for I believe enuresis (the "true incontinence" of Guyon) diurna as well as nocturna,—if we except those cases where it is due to central nervous disease, and those due to polyuria, or foreign bodies in the urethra or bladder,—to be only an advanced stage of those conditions which cause the so-called "irritable bladder," or vesical hyperæsthesia (the "false incontinence" of Guyon). By enuresis, or true incontinence, we mean that condition in which the urine is discharged from the bladder without the knowlege or consciousness of the patient; it occurs, in by far the greater proportion of the cases, as nocturnal incontinence. By "irritable bladder"—better, vesical hyperesthesia—we mean that condition in which there is an abnormally frequent or increased desire to urinate, the desire occurring at times so suddenly, and being so imperative in character, that the urine is discharged often against the will of the patient, or before preparation can be made to carry out the act normally.

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* Reprinted from the "Jacobi Festschrift."

Causes.—Owing to the many difficulties which prevent careful and thorough examination, cystoscopic and endoscopic, in the children affected,—frequently the sufferers are of an age to make such an examination impossible,—no exact data have as yet been obtained, and whatever observations have been made rest upon hypothesis. As a result, the little sufferers have in the past been subjected to almost all the drugs in the pharmacopeia—and many outside of it—with varying success, chief among them being bromides and belladonna. In addition, however, in many cases the knowledge or patience of the physician gave out before an accurate recognition of the causative factors was reached, and the matter was dismissed as a "bad habit," and the treatment directed toward improving the *morals* of the child. This has varied from smart beatings upon the nates, or the binding of a stiff brush upon the back at night (so that the stiff bristles might prick the tender flesh and keep the child lying upon its side), to the subcutaneous injection near the anus of ergotin (Henoch [1]). That these last-named measures must have a psychical effect, goes without saying; but there can be no excuse for their existence were an accurate diagnosis made. In view of its widespread prevalence and distressing character, this condition, trivial though it may seem, deserves greater study than it has received in the past.

A glance at the following list of causes, culled from the works upon this subject, must convince one how far the uncertainty concerning the causes has gone:

Central nervous system: Hysteria, neurasthenia, epilepsy, tabes, myelitis, cretinism, iodicy, dreams.

Genital tract: Phimosis, redundant prepuce, preputial adhesions, epispadias, hypospadias, urethritis, vulvo-vaginitis, bacteriuria, cystitis, vesical calculus, vesical tumor, tuberculosis vesicæ, renal calulus, pyelitis, nephritis, urethral obstruction, fragment of calculus impacted in the vesical sphincter.

Other causes: Acute febrile diseases, indigestion, constipation, diabetes mellitus and insipidus, spinal caries, rhachitis, onanism, hypertrophied tonsils, eczema, intestinal parasites, etc.

Guyon[2] says that the etiology of the condition is not clear; that sex causes no predisposition; that the influence of heredity is, however, unmistakable. He believes enuresis to be due to atony of the sphincter vesicæ, and advises faradization of the membranous urethra in the male, or of the urethra just before the sphincter in the female. Desault[3] believes excessive irritability of the bladder to be a predisposing moment; and that in some cases, the sensation which is caused by the contraction of the bladder and the discharge of urine is so slight that the entire act occurs uninfluenced by the will and without disturbing the sleep of the child; and that the factors which cause incontinence begin chiefly during childhood, and that in the course of time the irritability of the bladder diminishes, while the individual pays more attention to the desire to urinate, and that thus cure usually results. Trousseau[4] believes it to be a neurosis, characterized by the excessive irritability and the abnormally great tone of the bladder muscle, and, with this idea in view, used antispasmodics (chiefly belladonna) and hydrotherapy. Baginsky[5] believes it to be a neurosis dependent upon a lesser degree of innervation of the sphincter vesicæ when compared with the detrusor (Ultzmann's view); that in some cases of enuresis diurna, however, it is dependent upon insufficient development of the sphincter; and that, in the most rare instances only, is the cause a hyperesthesia of the bladder. Civiale[6] believes it to be a sort of overflowing of a full bladder, as a result of the relaxation of the voluntary contraction of the vesical sphincter, and that the desire to urinate is only slightly, if at all, felt during sleep. He advised local treatment, viz., catheterization, the catheter à demeure, and irritating or stimulating injections. Nicolaysen[7] was able, in eight cases of diurnal enuresis, to demonstrate bacteriuria. Imerwol[8] states that a frequent symptom, in boys suffering from gonorrheal urethritis, is nocturnal enuresis. Personally, I believe the condition, with the exceptions stated above, to be the result of a combination of conditions, the exciting cause being an abnormal increased reflex irritability of the mucous membrane, most marked at the sphincter, and at times, in addition, of the trigonum vesicæ, or sometimes, in the male, of the prostatic urethra, and that the cause of the heightened reflex irritability is to be sought either in a hyperemia or an inflammation of the vesical neck, the sphincter, or deep urethra, existing either singly or in combination. Unfortunately I have not been able to prove my belief by direct examination of the affected parts in children yet; but the careful endoscopic and cystoscopic, as well as urinanalytic examination of considerably more than one hundred cases of this condition in the adult male and female, as well as the gratifying results obtained in adults and children from treatment based upon this view, have led me to believe that the exciting cause in children is the same as that in the adult, even though the accessory causes may differ somewhat.

Let us digress for a moment, and consider the mechanism of urination. Of the theories advanced to explain the act, that given by von Frankl-Hochwart and Zuckerkandl [9] seems to be the most logical:

"At first gradual filling of the bladder with urine, then the desire to urinate, which increases in intensity; as a result of this, at first an increase in the already present tonic contraction of the sphincter, which then relaxes in children and those affected with diseases of the nervous system, and results in expulsion of the urine, while older individuals resist this still further, probably by voluntarily increasing the tonic sphincter-contraction, but at all events by calling the voluntary, auxiliary muscle-fibres into play. When the opportunity to urinate presents, the closure is relaxed, and the detrusor comes into play as an expulsive power."

In the infant, then, up to the time when intelligence and the will come into play, as well as in those individuals whose intelligence remains undeveloped, or is impaired, the emptying of the bladder is a purely mechanical function, dependent entirely upon the inhibition of sphincter-contraction, through impulses generated in the normal bladder-wall as the result of the distension of the viscus. Similarly, impulses generated in older children, during deep sleep, by over-distension of the bladder, as a result of polyuria, may lead to unconscious emptying of the bladder. But in the normally intelligent child, after the first year or two, where the sphincter is not paralyzed, the case is different. In these, the influence of the will comes into play, and the emptying of the bladder occurs normally five or six times during the day, and not at all during the night, precisely as in the adult. Where it occurs much oftener during the day, or at all during the night, where there is an inability to retain the urine, or where the desire to urinate is painful and imperative, we must conclude that the condition is abnormal.

In the normal bladder, infant or adult, the mucous membrane possesses a low degree of sensibility, and the tonic contraction of the sphincter is inhibited voluntarily, or the distension of the viscus and the consequent stimulus to its sensory nerves cause, through reflex action, the inhibition of sphincteral contraction. In the abnormal, hyperemic, or inflamed bladder, the increased irritability of the diseased mucous membrane and its contained nerve-endings renders them responsive to a far weaker stimulus—a far smaller volume of contents than the normal, or decomposed, or abnormal urine,—and causes the desire to urinate, even before normal distension occurs. Add to this an increased reflex nervous irritability, either as the result of an impairment and depreciation of the general nervous tone, or of hyperemias or inflammations in the neighborhood, as in the rectum, urethra, kidney, or other pelvic organs (for any condition which causes pelvic congestion is capable of producing vesical hyperemia), and we have factors abundantly able to account for the frequency and character of the urination. Thus I am inclined to consider most of the long list of causes previously quoted as remote causes only, and to believe that they act only in conjunction with, or as causes of, a hyperemic or inflamed condition of the deep urethra, or the sphincter, or both. Phimosis, redundant prepuce, preputial adhesions, urethritis, vulvo-vaginitis, and onanism I count among those factors which cause congestion of the deep urethra; epispadias and hypospadias I consider to be mere chance occurrences in this condition and devoid of any influence in causing it, unless they offer a mechanical obstruction to the flow of urine; bacteriuria, vesical calculus, tumor, or tuberculosis, and pyelitis to be such as cause inflammatory changes at or near the sphincter; acute febrile diseases, menstruation, indigestion, constipation, and intestinal parasites to be causes of vesical hyperemia; hypertrophied tonsils, adenoids, eczema, urticaria, and similar conditions to be causes only in that they disturb the sleep and tend to keep the child in a semi-conscious condition. As Trousseau[10] says: "The desire to urinate is, in these cases, felt only slightly, if at all, during sleep."—that is, the children are only partly conscious of it, and they respond mechanically to the desire to urinate, which desire is called forth by small quantities of urine acting upon abnormal mucous membrane. It is thus that the wetting occurs repeatedly, even though the child be awakened to urinate several times during the night. Similarly the absorption of study, or of play, during the day, may prevent full consciousness of the desire, and the sphincter relaxing, the hyperesthetic bladder discharges its contents before the little unfortunate has time to heed its call; similarly, fright, shock, laughter, or crying may cause unconscious relaxation of the sphincter. And, finally, where he or she *does* become conscious of it, and is forced to respond at frequent intervals, we have the clinical picture of the "irritable bladder."

Diagnosis.—In those children ill with diseases of the central nervous system, marked by paralysis, the incontinence is continuous, occurring day and night, and is marked by no fluctuations. Where the sphincter is *paralyzed*, the bladder retains *no fluid*, this flowing off aside of the catheter. Where the sphincter, or this and the trigonum vesicæ are inflamed, abnormally small quantities of fluid call forth the urgent desire to urinate; this is not the case where they are normal. Aside from this, although touching the membrane of the *body* of the incontinent bladder causes no desire to urinate, slight pressure at the *sphincter* at once calls it forth. Where incontinence occurs during well-marked epileptic attacks, the diagnosis is so clear that it needs no word from me. Where the attacks are less marked, or where they occur during the night, one may at times be unable to get any further history than that of attacks of vertigo, a bitten tongue, short lapses of consciousness during the day, or of twitching, groaning, or grinding of the teeth during sleep, or of heaviness and listlessness on awakening, as signs of the nocturnal epileptic seizures. Where enuresis occurs in the course of neurasthenia, or during dreams, I believe it to be secondary to some local vesical or urethral change.

Phimosis, redundant prepuce, preputial adhesions, epispadias, and hypospadias, I believe, as stated above, to be factors in the condition only in so far as they may cause urethral congestion, or inflammation, and through making infection of the urethra or bladder more easily possible. In urethritis or vulvo-vaginitis, the discharge must in every case be microscopically examined, to determine the gonorrheal or non-gonorrheal character.

In every case the urine must be examined for albumin and sugar. If turbid, the cause of the turbidity must be determined by chemical and also by microscopical examination. In this manner nephritis, diabetes, phosphaturia, bacteriuria, cystitis, tuberculosis vesicæ, etc., may be determined. Should the urine contain blood, examination must be made to determine the source, whether vesical or renal, and also the cause. Where the age of the patient will permit, or where the condition makes an exact examination and diagnosis imperative, as in cases where the urine is purulent or hemorrhagic in character, or where there is a suspicion of calculus, I consider cystoscopic examination, under the influence of general anesthesia if necessary, to be indicated and justified, especially since modern skill has given us instruments fitted for use in the bladder of the child, which enable us to make an *accurate* diagnosis of the condition, with the minimum of risk to the patient.

Where onanism is suspected, the child must be most carefully watched. Especially is this the case with little girls, who frequently bring about the desired result through tightly crossing the legs, rocking on the edge of a chair, or even, as in one of the cases which came under my observation, by leaning against the leg of a table.

Phosphaturia, oxaluria, hyperacidity, etc., I believe to come into play as causes of enuresis or vesical hyperesthesia, only after they have produced hyperemia or inflammation at or near the sphincter vesicæ—in other words, only after they have destroyed the superficial epithelial layers of the vesical mucosa. In this connection I would refer to the fact that irritating substances (even strong solutions of nitrate of silver) do not, when injected into the normal bladder, produce any sensation at all until the superficial epithelium has been destroyed.

Treatment.—As the diagnosis of the condition resolves itself into a recognition of the local vesical or urethral changes, as well as of the causes underlying and preceding them, so does the treatment resolve itself into that of the local vesical or urethral condition, as well as of the remoter factors.

In considering the treatment, I cannot do better than refer to the admirable and comprehensive article of our own master, Jacobi,[11] with whose words upon this subject I agree completely. The general health of the child must be looked after and treated, if depreciated, not only by dietary, but also by hygienic and hydrotherapeutic measures. Above all, I would warn against corporal punishment, or anything which savors of brutality, for these can only serve to increase the general nervous depreciation. I cannot believe the condition to be due to innate depravity or slothfulness, as some authors have intimated. Furthermore, all severe mental strain should be guarded against. The digestive tract must be looked after, and indigestion, constipation, diarrhea, or intestinal parasites removed by appropriate treatment. The evening meal especially should be light and easily digestible. The genital tract, too, must receive appropriate attention; phimosis must be reduced, adhesions ruptured. Above all, the glans penis and preputial sac must be frequently cleansed, as from this point, in many cases, infections of urethra or bladder have their start. Vulvitis or vaginitis, as well as urethritis, must be treated with reference to their gonorrheal or non-gonorrheal character. In the former, I should strongly advise the use of protargol, in ½ per cent. solution. If due to other bacteria, then the solution of bichloride of mercury, 1:15,000, will give most gratifying results, the discharge usually fully disappearing in very few days. If bacteriuria be present, the internal use of urotropin, in appropriate doses, combined with irrigations of the bladder by means of the sterilized catheter, with solution of nitrate of silver, 1:5,000, or stronger if the patient tolerates it, will give excellent results. The treatment of cystitis depends, to a great extent, upon the cause; those cases which depend the presence of a vesical calculus, or of a foreign body, or upon pyelitis, cannot be cured until the causative factor has been removed. Consequently this must first be sought for and appropriately treated; afterward vesical irrigations with 1 per cent. boric acid solution, followed by the instilla tion of ¼ to 1 per cent. solution of nitrate of silver, the latter being, after three to four minutes, allowed to flow off and the bladder subsequently irrigated with boric acid solution, will give excellent results. The polyuria of diabetes or of nephritis must be appropriately treated. That due to the imbibition of large quantities of fluid may be influenced by the restriction of the quantity ingested. I hold it to be a wise precaution to restrict the quantity of fluids taken during several hours before retiring. Onanism must be guarded against by watching the children and by examination for and treatment of the underlying cause; this may frequently be found by watching the playmates. The enuresis which at times accompanies the pelvic congestion of menstruation, preceding or accompanying the flow, is best treated by hot sitz-baths.

Disease of the respiratory organs, which interfere with proper breathing, such as nasal obstructions, adenoids, or hypertrophied tonsils, must receive appropriate treatment. Similarly also, disturbing, itching skin eruptions, which act, like those of the respiratory tract, as causes of enuresis, by disturbing sleep.

Concerning the results of faradization of the urethra I cannot speak, as I have not employed it; however, as the urethra, which is sufficiently large to permit of the insertion of an electrode, is also large enough to admit the small "children's cystoscope," I should personally prefer to use the latter and obtain some certainty regarding the real cause of the enuresis. Where the size of the urethra will permit, the use of small sounds or of the small-sized psychrophore ought to prove of value where the condition is due to congestion in the membranous or prostatic urethra. In the female, pencilling of the entire urethral mucous membrane, from and including the sphincter, to the meatus, with ¼ to ½ per cent. solution of nitrate of silver, by means of the endoscopic tube, every second day, gives excellent results.

Of drugs, bromides, chloral hydrate, rhus aromatica, belladonna and atropine, ergot, nux vomica and strychnine have been recommended, belladonna and atropine especially being highly spoken of.

The treatment which has given me the greatest satisfaction, both in adults and children, has been the following: Where the patients were too small to admit of direct local treatment, hot sitz-baths, once or twice daily, the appropriate treatment of accessory causes, the restriction of fluids in the evening, combined with a light evening meal; at night, where possible, the child was laid so that the head was lower than usual, either by laying a pillow under the hips, or, better still, by removing the pillow from under the head, and raising the foot of the bed. Where local treatment was possible, applications in the endoscopic tube, especially directly to the sphincter itself and the mucous membrane of the trigonum vesicæ, or by vesical irrigations and instillations. In this way proper diagnosis and properly applied treatment will usually effect a cure in from a few days to a few weeks.

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APPENDIX.

May 15th: Since sending off the manuscript of the above article, the following three cases of enuresis have come under the writer's treatment. In the first, a case of recent origin, it was possible to verify the above-expressed views by cystoscopic examination. It will be seen that, after two days of treatment, the enuresis had ceased, although the child was not considered *cured* until the cystoscope had revealed that, after the lapse of one month without any treatment whatsoever, the bladder and its functions still remained normal. In the second, although it was impossible to examine the bladder directly it was possible to exclude all other conditions and diagnose a suppurative cystitis (in all probability confined to the region of the trigone and sphincter) and to treat the case with reference to the causative factor. It will be seen that, although four years of other treatment had failed completely, that which was directed toward the real cause began to produce an appreciable effect within the first two weeks. The great obstacle to the treatment of this case, however, is that it is not possible to treat him with complete bed-rest. In the third case we have a type of occasional enuresis, due to a temporary polyuria, resulting from the imbibition of fluids which cause a passing irritation or stimulation of the kidneys. It will be seen that in none of the cases was any sedative or antispasmodic drug used.

The histories are as follows:

Case I.—Marie S., 7, well-developed school-girl.

Feb. 26, 1900. For four and five weeks the mother has noticed that the child wets her clothing repeatedly during the day, and the bed at night. In addition, she is forced to urinate every quarter-hour or half-hour during the day, and from four to six times during the night. This condition has remained unchanged, in spite of various forms of treatment, including corporal punishment. She had previously suffered from a purulent vulvar discharge, but without marked inflammatory symptoms. At present there is still a slight, purulent urethral and vulvo-vaginal discharge.

Discharge: Slight, muco-purulent. Contains pus corpuscles, squamous epithelia, bacteria.

Urine (removed with sterile catheter and at once examined): Turbid, neutral. Sediment contains pus-cells, epithelia, bacteria.

Therapy: For the present, vesical irrigation with 1 per cent. boric acid solution.

Feb. 28th: Urine less turbid. She retains the urine 1½ hours during the day and only wakes twice to urinate during the night.

Cystoscopy: After irrigation of the bladder, 75 cc. of fluid are injected (without either local or general anesthesia), and the children's cystoscope inserted. The lower sphincteral margin is found to be the seat of a marked inflammatory change, being strongly reddened, roughened and irregular. The entire region of the trigone is the seat of a marked inflammation, extending beyond the ligamentum interureterium. This inflamed area is, at several points, the seat of hemorrhagic ulcerations, and is covered at points by pus-flakes and shreds.

Therapy: Irrigations with 1 per cent. boric acid solution daily. Hotz sitz-bath at night, before retiring. Avoidance of highly-spiced foods, alcoholics, and also restriction of the quantity of fluids imbibed toward night. During the day the patient is instructed to drink plenty of water, also salol, 0.2, t.i.d.

March 2d: Since two days the child has wet neither bed nor clothing. During the past night she awoke only once to urinate.

Therapy: After the boric acid irrigation, 25 cc. of a 1/8 per cent. solution of argentum nitrate are injected and allowed to remain.

March 3d: No wetting. During the past night the patient slept without urinating at all. During eight hours today she has had to urinate only three times. No urethral or vulvovaginal discharge.

Urine: Slightly turbid, acid. Contains a trace of albumin. Nitrate solution injection repeatedly daily.

March 10th: Clinical condition markedly improved.

Urine: Acid; turbid (phosphates only); free of albumin.

Cystoscopy: Decided improvement. Only a marked hyperemia still present.

March 15th: Urinates four to five times during the day, and not all during the night. No wetting.

Urine: entirely normal.

March 17th: Condition normal. Urine normal.

Cystoscopy: Bladder entirely normal. Treatment now every other day.

March 24th: Has remained entirely free of symptoms. Urine normal. All treatment suspended.

April 4th: Since the above date the child has remained entirely free of symptoms.

Cystoscopy: Bladder entirely normal.

April 30th: Has remained entirely free of symptoms since March 24th, in spite of the entire cessation of treatment, and the fact that the child has gone to school, and has otherwise been not at all restricted. No discharge whatever. Urine normal.

Cystoscopy: Fully normal bladder.

Discharged cured.

Case II.—Fritz K., 6; undersized, pale and flabby child.

May 1, 1900: Since the past four years the boy has wet his clothing and his bed almost continuously, there having been no normal periods during this entire time. At the beginning of the trouble a redundant prepuce was operated upon, a dorsal incision being made, but without any effect whatever upon the enuresis. The mother states that the child has to urinate "every few minutes" during the day; that he wets his clothing at play, and at other times, in spite of his frequent other urination; that he wets his bed several times during every night. He has been treated, at various intervals, with internal medication, as well as external means, including dorsal incision of the redundant prepuce, and by frequent beatings. These various forms of treatment have been entirely without effect. The urine is said to have been turbid since the mother's attention was first drawn to the abnormal condition. It has never been bloody. The boy complains neither of pain nor of tenesmus. Complains, however, of frequent headaches; has an otitis media (sinistra), but no discoverable signs of mastoid involvement. Appetite poor, thirst marked, bowels regular. No urethral discharge.

Urine (discharged by patient into clean receptacle and at once examined): Turbid; alkaline; contains neither albumin nor sugar. Sediment consists of pus-corpuscles, few sqamous epithelia, bacteria (diplobacilli, streptobacilli, and a few cocci).

Owing to the exceedingly small urethral orifice, cystoscopic examination is impossible.

Therapy: For the present, salol, 0.1, t.i.d.; hot sitz-bath nightly; restricted diet (as in Case I.), mother is to wake the boy once during the night and let him urinate.

May 5th: It has been possible but once, two days ago, to irrigate the urethra with 1 per cent. boric acid solution. The mother reports that the boy has, since then, wet himself less frequently, and that he retains the urine about one hour.

Urine: Same as on May 1st.

Therapy: With a ureter catheter it becomes possible to irrigate the urethra and bladder with the boric acid solution.

May 7th: Condition same as on May 5th. Today, in addition to boric acid solution irrigation, the bladder is irrigated with 1/10 per cent. solution of nitrate of silver.

May 9th: Mother reports that the boy's condition is improved, that he wets the bed less frequently now, and has several times remained entirely dry.

May 12th: Retains urine 1½ hours during the day now, and then announces his desire to urinate. Must, however, respond at once, otherwise he wets himself. During the night if the mother wakes him once he remains entirely dry till toward morning, and then is found on rising to have wet the bed slightly.

Urine: Still turbid; slightly alkaline. Sediment consists of pus-corpuscles, solitary squamous epithelia, diplobacilli.

May 15th: Condition same as on above date. Still under treatment.

Case III.—Alfred S., 10, schoolboy; healthy; well-developed, bodily and mentally.

May 10th: The patient is brought for examination of his urine.

During his fifth year the boy began to wet the bed once or twice during each week, but never wet his clothing during the day. This condition continued for three years, and until the mother, an intelligent woman, noticed that regularly on those nights when the boy had drank either beer or wine during the evening he wet his bed, and that at other times he remained entirely free of the trouble. Acting upon this clew she has, since the past two years, allowed him neither wine nor beer at night, and he has never once wet his bed since.

Urine: Entirely normal.

Mother instructed to continue as before.

SCORBUTUS INFANTILIS.

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INFANTILE SCURVY is a constitutional disease induced by impairment of nutrition, especially when the nutriment is deficient in fresh foods. It is a disease bearing some resemblance to rickets, and until within the last ten years scurvy in the infant was, as a rule, diagnosed as acute rickets, or as purpura hemorrhagica.

Thomas Barlow, of London, was perhaps the first observer who clearly defined the pathology of scurvy as it occurs in childhood and infancy, which he demonstrated satisfactorily by a number of post-mortem examinations. In our own country as early as in 1891 Dr. G. H. Whitcomb, of Greenwich, N.Y., reported a typical case of infantile scurvy, and two years later Dr. Wm. P. Northrup, of New York City, reported a number of illustrative cases, many of which were confirmed by autopsies. It is, indeed, largely due to the painstaking and thorough work done by Dr. Northrup that infantile scurvy has come to be recognized as a distinct disease of early life in the United States.

Doubtless there are many cases of scurvy in infancy which pass unrecognized as such, they being mistaken for some other disease, such as rickets, marasmus, or purpura. If all the cases of scurvy were recognized and recorded, the disease would be found to be not so rare.

The etiology of scurvy, as it occurs in infants, is not yet fully understood. Since it occurs most commonly in infants fed for a long time on the same article of food and deprived of fresh foods, the cause would seem to be due to a fault of the chemical changes in digestion and assimilation. It has recently been suggested that the disease is due to a specific microorganism. This, however, has not been satisfactorily demonstrated, and up to the present time we have no further knowledge of the etiology of scorbutus.

The pathological lesions of scurvy have not been fully established, yet much information on the subject has been obtained by autopsies made on infants dying of the disease. No peculiar alteration of the blood has been found. There are often deep hemorrhages into the muscles, and occasionally into the joints. Subperiosteal hemorrhage is frequent, and chiefly occurs in the long bones. There is also a tendency to separation of the epiphyses of the long bones. Hemorrhages into the mucous surfaces are usually present, the gums and inner sides of the cheeks being chiefly affected. Purpura hemorrhagica occurs in many of the cases, and occasionally small vesicles appear scattered over the trunk, filled with bloody serum.

Symptoms.—The infant affected with scurvy is anemic and flabby. After the disease is established, the child manifests pain on handling and excessive tenderness on moving the limbs. It will lie for hours in its cradle without trying to move, and when approached it cries out for fear of being handled. The manipulation necessary in changing the napkins causes the infant to cry piteously. Fusiform swellings along the thigh or leg indicate subperiosteal hemorrhage, and it explains the great pain caused by handling the limbs. It may be remarked just here that these symptoms are often misleading to the casual observer, and these cases are often diagnosed as rheumatism.

Hematuria and intestinal hemorrhage may occur. The temperature continues nearly normal, the urine rarely contains albumin. A brief account of two cases recently under my care will illustrate:

CASE No. 1.—Carrie B., aged 4 months, had nursed at the mother's breast for six weeks and "thrived" as well as the average. At that time the mother's health began to fail, and the baby was taken from the breast and bottle feeding begun, Horlick's Malted Milk being used. This food seemed to be well digested, and the baby continued to grow and was apparently well until about the fourth month. It now became rather constipated, necessitating the use of an enema daily. About this time the infant became exceedingly irritable; it would cry aloud every time its napkin was changed, or when it was washed and dressed. The appetite remained good, and a half dozen bottles of malted milk were fed to it each day.

The almost incessant crying led the nurse and mother to believe that the infant needed medical attention, and I was asked to see the case.

I found the infant lying in its cradle with its legs drawn up and its arms extended, and its face presented an expression of the deepest anguish and fear, its dilated pupils and widely open eyes and quivering lips seemed to beg pitifully to be let alone. The slightest movement of its hands and feet would bring on loud and sharp cries as if causing excruciating pain. The temperature was 100° F. There were two distinct enlargements on the legs, one on the outer aspect of right thigh, the other on the anterior aspect of left tibia. The foregoing symptoms led me to believe the case one of acute rheumatism, and I immediately prescribed sodium salicylate. This gave no relief whatever after four days' trial. About this time purpuric spots began to appear over the trunk, and while the nurse was lifting the infant from its cradle by placing her hands under the arms, she suddenly felt something "giving away," which on examination was found to be a separation of the epiphysis of left humerus; distinct crepitation, as in an ordinary fracture, could be plainly felt. It now dawned upon me that the case was not rheumatism, but scurvy.

All medicines were immediately withdrawn, the arm and shoulder were placed in immovable dressing, and a purely dietary treatment adopted. Malted milk was abandoned and fresh cow's milk ordered, together with half an ounce of beef juice three times daily, and the juice of two sweet oranges each day. As sweet oranges were not to be obtained at that time of the year (September), we substituted the scrapings of sub-acid apples, which the little sufferer ate with relish. Decided improvement followed at once, and the infant was fully recovered in two or three weeks.

Case No. 2.—Willie J., aged 8 months, was brought to me from near Lexington, Ky., last August. For three months the infant had been fed exclusively on "Mellin's Food." This case presented many of the same symptoms as Case No. 1, described above. The mother assured me that her baby cried continuously unless it was under the use of opium. As the mother sat before me giving a history of the case, she continually jolted the infant upon her knee, vainly trying to get it quiet, but this only made the child cry louder. Every attempt at examination seemed to intensify the agony of the patient, and not until after I had given it a "few whiffs" of chloroform were we able to remove its clothing and make the necessary examination.

About one dozen purpuric spots were found upon the body, the gums were spongy and there was a slight oozing of blood around the four incisor teeth that were present. These symptoms were sufficient to confirm the diagnosis of scurvy.

The treatment consisted in a radical change of diet from the artificial food to fresh cow's milk, beef juice, mashed potatoes with butter and the juice of two sweet oranges daily. Rapid improvement followed till complete recovery.

In conclusion we may set down as causes of infantile scurvy any single food, barring the mother's milk, continued for too long a time, especially the artificially prepared proprietary foods, of which there are a great number on the market.

The remedy for scurvy is simply fresh wholesome food with fruit juices.

Nasal Obstruction in the New-born.—M. Leopold Chauveau in the *Gaz. Hebd. de Méd. et de Chir.* says that an eczematous impetigo may, by its secretions, occlude the nares of a new-born infant. An acute coryza may be responsible for the obstruction. For the latter condition, he advises the instillation three or four times daily of three or four drops of one of the following solutions, the head being held well back:

℞	Oil of vaseline	1½ ounce.
	Resorcin	15 grs.

or

℞	Glycerine	1 ounce.
	Biborate of sodium	1½ drachm.

—*Practitioner.*

EDITORIAL COMMENTS

Commercialism in Medicine

Medicine is primarily a noble profession, but there seems a tendency in certain quarters to make of it a good trade, and to apply the same principles of conduct to it that all true gentlemen condemn when found among their servants. We refer to the practice of splitting fees between the consultant and the family physician. If we detect our cook taking a commission from the butcher, we are angry, but we argue: "What else can be expected of a cook?". If we ask a friend to recommend a paper-hanger and subsequently find out that he has recommended one who returns him part of the profit, we can never again have implicit confidence in that friend. We are inclined to think that his judgment must have been biased in favor of that paper-hanger who would give the largest reward for the contract, without considering very fully what the character of the work might be. The one thing above all others that we must not dare to trifle with is the absolute confidence of our patients in our integrity. Think of what they would be compelled to think of us should they suspect us of this practice. They would certainly be justified in insisting upon making the choice of a consultant themselves—a thing which they are often incompetent to do. It has been stated that the family physician would lose in the end by taking his case to the man who would pay the largest stipend, because the latter would be likely to be a relatively incompetent man. Thus matters would regulate themselves. The practitioner would certainly endeavor, for his own good, to engage a fairly competent man; but this would only be a compromise with the devil, and would be endangering the life or health of the patient for the benefit of the family doctor's pocket. No physician who allows his greed to influence the choice of a consultant can do his full duty by his patient. A year or two ago the journals published an account of a country doctor who arrived here with a half-dozen celiotomy cases, which he endeavored to farm out to the highest bidder. We were glad to note that he took his cases to another city. To the honor of the medical profession in New York City it can be said that this evil is not as prevalent here as in some other parts of the country; to the dishonor of certain of its members is due the fact that the custom prevails at all. There are many specious methods of allowing oneself to be deceived. One is to accept a fee from the consultant for valuable services rendered at the time of the operation, and so forth. Of course this seems rather nicer than the following which recently appeared in a western medical journal:

> "DOCTOR:
>
> Why not send your gynecological patient to a doctor who will pay you a percentage? For particulars, address
>
> Box ——,
> MILWAUKEE, WIS."

But the principle involved is the same. Better be poor than soil our consciences by indulging in such practices, for "such is the price of peace." T.

Palatable Effervescing Quinine:

℞	Quininæ sulphatis	ʒj.
	Acidi citrici	ʒijss.
	Syrupi simplicis	āā ʒxv.
	Syrupi aurantii cort.	
	Aquæ destillatæ	q.s. ad ʒvj.

M. Sig.—Add 10 or more drops to about two ounces of water, in which gr. v. of bicarbonate sodium has previously been dissolved, and drink while effervescing.—*The Practitioner.*

CORRESPONDENCE

NEW YORK, May 30, 1900.

To the Editor of PEDIATRICS.

DEAR SIR :—Enclosed is a short account of a case that has been of great interest to Dr. Jacobi and myself, and which I should be glad to have published, at his suggestion, provided the text meets with your approval.

Infantile Sepsis Without Fever.—The patient on admission to the Children's Medical Ward of the Roosevelt Hospital was 6 weeks old. Family history negative; no syphilis. The baby was normal at birth, with clean skin, no coryza and no cough; voice feeble. Three weeks after birth, without known cause, redness and swelling of skin were first noticed behind left ear. Soon the skin over the whole body became tense and hot to the touch. No fever developed. One week later the symptoms abated and rapidly disappeared without desquamation. Dejections greenish, frequent, no mucus, blood or bad odor. There were two attacks of vomiting; no convulsions; nutrition remained good. Ten days before admission a swelling reappeared on left elbow, posteriorly, and later on both shins. Shortly afterward additional swellings were present, one on the left thigh, anteriorly, near the middle, and another in the lumbar region posteriorly, near the middle line. The scrotum also became involved two days before admission, and there developed an angry pustule on the prepuce. The patient was brought to the hospital on account of the multiple swellings. On admission the tumors on the extremities and the one involving the lumbar region were hot, tender, red, and fluctuating. Temperature 99.4 (by rectum), pulse 148, respirations 42. The urine was normal. Physical examination showed the lungs normal, the liver and spleen negative—no enlargement discoverable. The heart was laboring, with some irregular action; there was a marked systolic mitral murmur; aortic systole long drawn, no murmur developed. Pulse weak. Patient looked distinctly poisoned.

Blood examination showed: hemaglobin, 50 per cent.; red blood cells, 2,987,000; white blood cells, 12,200. Thus there was but little actual increase in the number of white cells, but when the red cells are reckoned at 5,000,000, the relative increase is apparent, for there would be 20,421 white cells; there are, therefore, nearly twice as many whites as would appear in a simple anemia.

Whisky every two hours and strychnine thrice daily were ordered. On the following day the various abscesses were freely incised, no anesthetic being given, and the usual treatment for infected wounds was instituted, with the exception that iodoform gauze was very sparingly used for dressings to avoid danger of poisoning by absorption. A few days later the septic aspect departed. The wounds have all healed with one exception, and this is now rapidly progressing to recovery. Of especial interest is the temperature curve. On admission it was normal, the following day rising for a few hours to 102° and immediately falling again to normal. With one exception, when the temperature rose to 101°, it has been continuously below 100°. Taken in connection with the absence of other symptoms of an acute infection, there being neither convulsions nor gastric disturbances, the absence of fever makes the case worthy of consideration. And this the more when I add that the little patient was diagnosed as having erysipelas by one physician and syphilis by another. The above report is made at the suggestion and through the courtesy of Dr. Jacobi, in whose ward the patient was cared for.

Yours very truly,
ERNEST V. HUBBARD, M.D.,
House Physician.

To the Editor of PEDIATRICS.

DEAR SIR:—I know by experience that editors do not relish comments upon their comments, and possibly this note will not be gratefully received. Still, I want to say a word on your editorial comment in your issue of May 15th, on "Oxyuris in the Appendix of Children." It is neither a criticism nor a "pat-on-the-back."

You refer to a recent operation in one of our hospitals. A boy with catarrhal appendicitis showed several specimens of oxyuris in the lumen. You state that on searching the literature you found this occurrence the rule. Then you illustrate with quotation from G. F. Still's paper in the April *British Medical Journal.*

Now, at the risk of having you reply, "Of course, everybody knows that," I want to say that the appendix is, as Still remarks, a breeding-place for the parasite. I have had the opportunity of noting this quite frequently at autopsies. At the risk of being irreverent, I might quote one of the very callow students, who declared gravely that "logically, the appendix vermiformis must needs be the nest for the oxyuris vermicularis." And, the play on words aside, it is quite true. If it were not determinable on autopsy, the fact remains that when suppositories of santonin and the infusion of aloes act remedially to-day, to-morrow the colon is colonized again.

Correlatively, let me remark that it would be a good idea if we were as apt at recognizing that children "have worms" as our grandsires were. They were helminthologic every day in the week, and "worm medicines" were at the top paragraph in the materia medica. We, with our superior knowledge of the appendix, are more inclined to leave the anthelmintics out of our pharmaceutic catalogs.

Then there is another point. You speak of catarrhal appendicitis. Will you be provoked if I say that it is my observation that appendicitis is invariably catarrhal primarily? It seems to me, from my observations and from my reading, that appendicitis is characterized by a catarrhal inflammation of the appendix vermiformis, and were it not for the primary catarrhal condition, there would be no appendicitis. I speak first of children, afterward of adults.

I am not acquainted with all of the "thirty entozoa" which are said to vex the human intestines, but I know some of them, and find that they affect the catarrhal mucous membrane invariably. The parasites are present more often than we give them credit for; their presence is dependent on the catarrhal condition of the intestines, and their breeding-place is the catarrhal appendix.

Now, my treatment is based upon these pathologic conditions. Where a patient "has worms," I proceed to treat intestinal catarrh. The worms "are there" because of the catarrh and disappear with the catarrh. I give half-teaspoonful doses of eucalyptol three times a day, and, if the exigencies require, employ a 20 per cent injection. As the catarrhal condition disappears, the worms fail to materialize. To my mind, eucalyptol is first and foremost as an up-to-date anthelmintic.

And to go still further. Whatever may be said as to the mooted medical treatment of appendicitis, I want to say that much as I am fascinated with the surgical operation, the medical treatment is as distinctively successful as anything in the science of medicine. The patient presents a history of gastro-intestinal catarrh always. Treat the catarrh, and the appendicitis is precluded. If already in evidence give the full (half-teaspoonful) dose of eucalyptol. I have had none but the best of results with it; and it is my custom to prepare the patient for the operation by administering the eucalyptol. Frequently the operation does not have to be performed.

One thing more—the history of the patient with appendicitis shows that he or she has been "subject to bellyache" more or less. For this ache, crapulent colic, or whatever you may name it, I give the eucalyptol. It is very successful.

GIFFARD KNOX, M.D.

DEWEY PARK, N. J.

How to Thread a Needle.—One of the most prolific causes of what might be called surgical profanity is the difficulty of threading of needles. Dr. Joseph M. Jackson (*Buffalo Medical Journal*, June, 1900), recommends the following method as one that is not likely to add to the labors of the Recording Angel: "To thread a needle, hold it with the ring and little fingers of the left hand, instead of the thumb and forefinger, as is the usual way. This method leaves the thumb and forefinger free to grasp the smallest bit of silk or other suture material as it passes through the eye, and pull it to a safe distance on the other side. This does away with the slipping back, so common in the old way of changing hands."—*The Practitioner*.

SOCIETY REPORTS

AMERICAN MEDICAL ASSOCIATION—SECTION ON DISEASES OF CHILDREN.

(*Continued.*)

Second Day, June 6, 1900—Afternoon Session.

5. Dr. HENRY KOPLIK, of New York, read a paper entitled **Roetheln, a Distinct Affection Apart From Measles and Scarlatina, and Its Differentiation From These Exanthemata.** Some authors, e. g., Jurgensen doubt the existence of roetheln as a distinct morbid entity. The speaker gave the characteristics of roetheln and its distinguishing features as contrasted with measles and scarlatina. The eruption in roetheln resembles very closely that of measles, in both form and locality. The exanthem is preceded by an erythematous blush, which disappears after a few hours and is replaced by a papular, rose-red eruption, the papules being discrete and arranged in crescents. After efflorescence on the trunk the eruption may disappear in a few hours, leaving faint pigmented areas. The speaker has not been able to establish a distinct desquamation in roetheln. The mucous membranes are not affected as in measles, therefore in roetheln we do not see the conjunctivitis which characterizes measles, but simply a congestion of the conjunctiva. The tonsils are not painful in children with roetheln, but adults may complain of pain in the throat. There is said to be a spotted eruption on the soft palate and on the mucous membrane of the cheeks, and the writer has seen these eruptions, but they are not characteristic of roetheln, and therefore have no diagnostic value. In a small percentage of cases we see red spots on the mucous membrane of the mouth in roetheln, but we never see the characteristic buccal spots of measles, with their bluish center, in the mouths of patients with roetheln. Hence these buccal spots are valu-

able negative signs in roetheln. In roetheln the temperature is highest at the onset of the disease, and it usually falls to normal when the eruption has fully developed. In twelve cases the lymph nodes were found to be enlarged in various parts of the body. In measles and scarlatina these swellings take place but rarely. The enlargement of the glands persists sometimes for two or three weeks after the eruption disappears. The spleen is not enlarged and is therefore of no diagnostic value.

6. Dr. J. F. SCHAMBERG, of Philadelphia, read a paper entitled **A Clinical and Pathologic Study of the Rash of Scarlet Fever with Reference to the Origin and Character of the Desquamation.** The redness of the eruption of scarlatina has been variously defined. It is really impossible to reproduce the color without actually copying it. The color varies in different individuals, and is sometimes a bright red, sometimes brownish or purplish. In the majority of cases it is a dull red. The bright red color may become dusky later on. The eruption is made up of deep red puncta surrounded by pale red areolæ. This is especially noticeable in such places as the forearm. In addition, there are frequently elevations corresponding to the hair follicles, the so-called scarlatina papulosa. These papules may be of the normal flesh-tint or reddish. A third form of eruption is the scarlatina miliaris or vesicularis. This consists of minute vesicles, from a pinpoint to a pinhead in size, which are found especially on the chest, the abdomen and the mons veneris. The author has examined several hundred cases of scarlatina with the view of establishing the frequency of the vesicular eruption, and he found that these vesicles are present in the majority if not in all cases of scarlatina. In some cases they are so prominent that they may be mistaken for some other disease, while in others they cannot be seen with the naked eye, and they require a microscope to distinguish them from the other lesions of scarlatina. As a rule the vesicles are more prominent in the severer eruptions.

The intensity of the desquamation may be said to be directly proportional to the amount of vesiculation. Desquamation is not peculiar to scarlet fever. There are other conditions, usually grouped under the designation scarlatiniform erythema. These tend to recur, and the desquamation lasts longer. The rash may be very mild, and be followed by no desquamation. In scarlatina the desquamation begins as a pin point sized scale at the top of the vesicles, and gradually enlarges until the large scales characteristic of the disease are formed. The author described in detail the histopathology of the skin in scarlatina, and showed a number of microphotographs.

DISCUSSION ON CONTAGIOUS DISEASES.

Dr. C. F. WAHRER, of Fort Madison, Iowa, said that it is difficult to acquire a knowledge of the exanthemata except by actual observation of the cases. Hence descriptions, photographs, etc., are of little value.

Dr. J. P. CROZIER GRIFFITH, of Philadelphia, said that the doctrine advanced by Dr. Wahrer in his paper will probably not meet with the approval of the Section. In a large European city, he could not remember which, there were more deaths from measles than from diphtheria and scarlatina combined. Hence measles is not a disease to be treated lightly, and not one to which one would voluntarily expose children. As regards desquamation in roetheln, he has seen it quite often, but it is true that it is absent in the majority of cases. He has also seen the buccal eruption of which Dr. Koplik spoke. The temperature did not help him to differentiate roetheln from measles. Enlarged glands, especially behind the sternomastoid, are also found in measles. The diagnosis of roetheln is really puzzling.

Dr. LOUIS FISCHER, of New York, said that he would not be willing to put his child into the same bed with one suffering from measles. Measles is a very treacherous disease, especially on account of its complications. In the cases that are treated with the greatest care otitis media, empyema, etc., occur not infrequently. The laryngeal stenosis of measles is nearly always fatal. In 25 cases of stenosis, occurring in the course of measles, the speaker had 20 deaths. He recalled two cases in the same family. One child had Koplik's spots and catarrhal symptoms, while the other had no spots and no catarrhal symptoms. This last case was diagnosed as one of rubeola. He agrees with Dr. Koplik that the buccal signs are important diagnostic factors in doubtful cases. He has seen enlarged lymph nodes in almost all cases. Baginsky lays stress on a whitish coating at the edge of the gums. This is a deposit of epithelial cells, and is regarded by Baginsky as a premonitory sign of measles, as it occurs before the eruption is seen.

Dr. KOPLIK, in closing, said that he does not claim that a diagnosis can be made in every case of roetheln, but he believes that he can show that roetheln is certainly a separate morbid entity. He has never seen any complications of any severity after roetheln. As regards the lymph nodes, he said that he lays no stress on the enlargement of the postcervical glands, and rules these out, only considering the other glands of the body when making a diagnosis between measles and roetheln.

Dr. SCHAMBERG, in closing, said that in Paris the death rate for the past five years was greater from measles than from diphtheria and scarlatina combined. He added that the same conditions were found in Philadelphia. The whitish deposit at the edges of the gums occurs both in scarlatina and in measles, and is therefore not at all diagnostic of measles. It may appear to some that his descriptions of the lesions were useless refinements of diagnosis, but this is not so, for in many cases the eruption is so exclusively papular or vesicular that scarlatina was not suspected. He examined all the superficial glands in 100 cases of scarlet fever, and found that the glandular enlargement is constant in this disease. Hence any differential support given to enlarged glands must be very indefinite.

Dr. JOHN LOVETT MORSE, of Boston, read a paper entitled **Fetal and Infantile Typhoid.** But little reliance can be placed on the earlier data on the subject, and no satisfactory conclusions can be drawn from them. Since the discovery of the typhoid bacillus, and more recently of Widal's reaction, we may hope to get more definite results.

Abortion is said to occur in typhoid fever, the majority of observers agreeing on about 70 per cent. This abortion is due to the high temperature, the toxemia, and the death of the fetus.

Fetal typhoid is a rare condition. The author gives an analysis of the cases reported since the discovery of the differences between the colon bacillus and the typhoid bacillus, and arrives at the following conclusions regarding fetal typhoid:

1, The typhoid bacillus can traverse the abnormal, and possibly the normal placenta from mother to fetus. Other organisms also may pass in the same way. 2, Infection of the fetus results. Because of the direct entrance of the bacillus into the circulation, intrauterine typhoid is from the first a general septicemia. For this reason, and possibly also because the intestines are not functionating, the classic lesions of extrauterine typhoid are wanting. 3, The fetus usually dies in utero or at birth, as the result of typhoid infection. 4, It may be born alive, but feeble and suffering from the infection; if so, death occurs in a few days without definite symptoms. 5, It is possible that the fetus may pass through the infection in utero and be born alive and well; there is, however, no proof that this happens. 6, Infection does not always occur; the pregnant woman does not necessarily transmit the disease to her child.

Infantile typhoid, i.e., in children under two years, is said by many to be unusual. There is no proof that this is so. Thayer and the author examined 50 cases of gastro-enteritis in children under two years for the Widal reaction, in 1898. The positive result was obtained only in one case, and that reaction was probably transmitted from the mother.

The writer analyzes the cases reported within recent years, and comes to the following conclusions: Except for the lessened exposure in the first years, on account of the character of the food, there is no reason why typhoid should be less frequent in infancy than in later life. It is less frequent, nevertheless, judging from the small number of cases reported, but this may be because it is not always recognized. Bacteriologic examination and Widal test must be made in a large number of cases to ascertain its frequency. The symptoms are essentially the same as in adults, but the course is shorter and the mortality greater. The pathologic lesions are insignificant, as a rule. The contrast between them and the severity of the general symptoms is striking, and is probably due to the fact that in the infant typhoid is a general rather than a local infection.

DISCUSSION.

Dr. J. C. Wilson, of Philadelphia, said that in his experience cases of infantile typhoid which had been diagnosed on clinical grounds did not show such a mortality as that given by Dr. Morse. These cases lasted from 10 to 18 days, with roseola, a remittent febrile movement, and emaciation, and the patient gradually recovered after defervescence. He feels sure that in the cases of typhoid in infants which he has observed the mortality has been extremely low. This question, however, can only be settled with the aid of bacteriology and serum diagnosis. There are three types of enteric fever: 1, The fetal type; in the fetus it is a septicemia. 2, The infantile type; in the infant the symptoms are milder, the duration is shorter, and the temperature is remittent. 3, The adult type; the symptoms are more severe, the duration is longer, and the temperature is subcontinuous. It is difficult to draw these lines sharply, because the infantile type may occur in adults and the adult type in infants.

Dr. J. P. Crozier Griffith, of Philadelphia, said that Northrup has shown that the lesions in the intestines of infants with typhoid cannot be differentiated from those of gastroenteritis. He believes that typhoid fever is more frequent in childhood than is generally supposed. The reason why mistakes are made in the diagnosis of typhoid in infants is that we look for the symptoms of the adult type and forget that those of the infantile form are different. He thinks that with the present facilities of diagnosis we shall find more cases of typhoid in infants. The mortality is certainly lower in children than in adults. In his hospital it was less than 3 per cent before the cold water treatment had been instituted.

Dr. Morse, in closing, said that the high mortality of which he spoke in his paper referred to children under two years of age. In children over two years old the mortality is certainly less than in adults. The most important conclusion is that the data on both fetal and infantile typhoid are at present very incomplete and that further investigation is necessary.

BOOK REVIEW.

DISEASES OF CHILDREN.—Transactions of the Section for Diseases of Children at the Fiftieth Annual Meeting of the American Medical Association, held at Columbus, Ohio, June 6 to 9, 1899. Chicago: American Medical Association Press. 1900. Large 8vo, pp. 5-228.

It is to be lamented that an excellent collection of papers should appear in such unattractive garb as the present edition of the Transactions. The make-up of the book is vastly inferior to that of the 1898 Transactions of the Section. The paper is of poor quality, and the presswork shows lack of care. We notice that the officers of the section for 1900 are named on the second page, while those who had charge of the section for the year for which the present volume stands are not mentioned. There are but few illustrations, and these simply useless; it is ridiculous to print half-tones on the soft, rough paper on which the book is printed. There is no indication in the book as to who was responsible for the editorial work involved in its preparation.

To Prevent Loosening of Teeth.—When it is desirable to counteract a tendency to this condition the following mouth wash is recommended:

℞	Acidi tannici	ʒij
	Tinct. iodi	ʒj.
	Potassii iodidi	gr. xv.
	Tinct. myrrhæ	gtts. lxxx.
	Aq. Rosæ	℥vj.

M. Sig.—A teaspoonful in water to rinse mouth every two hours.—*The Practitioner.*

ABSTRACTS

UNIQUE STUDY OF CHILDREN.

A mine of surprising facts is presented to the scientific world in the report of the Bureau of Education, giving results of a unique study of no less than 15,009,000 of school children, here and abroad.

A study of fear in the youthful subjects was made by distributing hundreds of lists containing all manner of causes such as might excite that emotion. Parents, teachers and other persons—even the little ones themselves—marked off such items as the latter really feared. After reducing all of the replies to a table, it was found that the highest number feared thunderstorms, the next highest reptiles. Then follow, in order, according to the number fearing them: strangers, darkness, fire, death, domestic animals, disease, wild animals, water, insects, ghosts.

A comparison of an equal number of boys and girls showed that the girls feared 1,765 things on the list and the boys 1,106. The girls exceeded the boys in the fear of everything except water, high places, and strangers. The ratio of girls to boys in the fear of rats and mice was 75 to 13, as might be expected. It was also ascertained that fear in boys increases from the 7th to the 15th year and then declines, while in girls it increased more steadily from the 4th to the 17th year before diminishing. The fear of thunder and lightning, reptiles, robbers, and of machinery was found to increase with age.

Another novel inquiry enlarged upon the fear of ghosts in children. By questioning the little ones and tabulating their answers, it was discovered that the most frequent source of their knowledge of ghosts was in stories told by other children. Stories read by them ranked second in frequency. Of all the other sources, servants had been the most active. Some had derived their first knowledge from pictures, a less number from games or from their own imagination. The smallest number, less than 1 per cent., had first heard of ghosts from their parents.

It was discovered that fear almost universally accompanied belief in such specters. Other reactive effects in order of frequency were: fascination, fear of something else in addition to the ghost, lingering fear, absence of fear, fear of telling, enjoyment, and desire to run away.

Almost a third of all the children examined had the conception that ghosts were white, an eighth that they were like the human figure, a ninth that they were shadowy, an eleventh that they were like dead persons, a fourteenth that they had long arms or hands and less than a nineteenth that they were like skeletons. Additional notions as to appearance in order of frequency were that "spooks" have sepulchral voices, are without substance, luminous, black, like animals, like fairies or spirits, and that they have lurid, hollow eyes.

The most popular belief as to the power of ghosts was that they chase and catch children. Other notions, in the order of the number of believers, were that they glide swiftly, appear and disappear, do all sorts of mysterious things, foretell death, and injure people. Of those ques tioned as to the time when ghosts appear, a majority believed it to be in the dark, when one is alone. Stating the places where ghosts may be expected, the highest number of opinions was in favor of graveyards.

A study of "only children"—those without a brother or sister—indicated that this class is below the average of health and vitality. Mental and physical defects of a grave nature were found much more generally. They were found to enter school later than other children, and to be less regular in attendance. Their success in school work was below the average. They did not appear to join readily in games with other children, but preferred quieter forms of amusement. A considerable number had imaginary companions. Their social relations were generally characterized by friction. Precocity and selfishness were predominant traits. Such defects seemed to result from the tendency of parents to spoil "only children," and from a tendency to sterility in the stock.

A careful study of the circumstances of birth and childhood of what were considered to be the fifty greatest men of modern times disclosed the fact, interesting in comparison, that the average great man was born in a family of six children, not including half-brothers or half-sisters. It was figured from the data that the chances for greatness in a child are two to one in favor of the older half of the family.

The children tall for their age are generally born in summer is another novel deduction. As far as boys alone are concerned, those who first see the light during autumn and winter are not so tall as those born in spring and summer. Those born in November are the shortest; in July the tallest. Averages for girls show that those born in winter and spring have less length of body than those born in summer and autumn. The tallest girls are born in August.

That growth in children degenerates as we go lower in the social scale is shown by the statistics of 50,000 individuals. There is found to be a difference of 5 inches in average stature between the best and worst nurtured classes. In a separate study of boys alone, the same results are vividly shown. Beginning with public school boys with good home surroundings in the country and then falling into grades successively lower and lower—through asylums, industrial schools, and the like—their mean stature shows a constant diminution.

In another investigation, children were separated into two classes, the poor and the well-to-do. Their livers were measured through their skins by an expert, who found that those of the rich were considerably larger than those of the poor.

In experiments for testing the memory powers of an equal number of boys and girls at different ages in school and university classes a simple story containing 324 words and 152 distinct ideas was read to them. The reading required three minutes, after which they immediately proceeded to write what they could remember. The conclusions were that the growth of memory is more rapid in girls than in boys. It was also shown that one must reach his maximum memory power at an early age, generally speaking.

Another unique plan of research was for the purpose of studying the characters of children through their doll habits, it being considered that the educational value of dolls is great. A list of twenty-nine questions was prepared and submitted to nearly a thousand children, boys and girls. The various kinds of dolls played with ranked as follows in order of popularity: Wax, paper, china, rag, bisque, rubber.

Of many confessing that they had treated other things as dolls, the greatest number had so substituted cats, clothespins, pillows, bottles, sticks, and dogs. Nearly four-fifths had tried to feed dolls; nearly two-thirds had thought them hungry: nearly seven-tenths had credited them with mental powers; almost the same number had really thought them sick at times.

It was discovered that of city school children below six years 82 per cent of boys and 98 per cent of girls have played with dolls; between six and twelve years, 76 per cent of boys and 99 per cent of girls.

OPTIC NEURITIS IN CHILDREN: A CLINICAL NOTE.

Dr. Leslie Buchanan, in the *Edinburgh Medical Journal* for May, 1900, writes concerning this interesting affection. Unless another distinct cause can be found, if either atrophy or inflammation of both optic nerves be seen in a child or young person, the presence in the neck of enlarged glands, even of very moderate size, is an indication that there may have been or may be a meningitis or a tubercular growth in the brain. The history of one of the cases reported by Buchanan is as follows:

G.G., aged 18, had a fall sixteen years ago, by which his scalp was cut deeply. Bright and active before the injury, the child, after being ill and peevish for a few days, became dull, nervous and hypersensitive, and remained so. Bodily development and mental cultivation showed no evidence of interference, other than mentioned above. The boy went to school and learned fairly well, but never played games with boys, and always avoided noise and excitement. Two years ago he had sore eyes, which, however, left no permanent traces. A year ago or so the patient first complained of severe headaches. Vomiting of considerable severity began soon afterwards, and these symptoms continued for three or four months, after which the sight began to deteriorate. Six months ago the sight was so bad that the patient could not read. The general state was low, and the patient was much emaciated. Four months ago the vision was probably at its worst, the patient then being unable to recognize large objects. There was never any paresis or difficulty of speech.

When seen his vision was V.O.D. — large objects; V.O.S. — fingers at 4 ft.; O.E. — refaction normal each eye.

Optic nerves pale and clear-cut but irregular in outline; veins large and tortuous, arteries small. There was slight hazizess throughout the fundus, but no evidence of choroiditis.

Patient had very poor teeth and thick lips, slow but regular speech. The throat and nose were healthy looking. There were several moderately enlarged glands in the neck on either side. One of the patient's brothers died of consumption, and the father suffers from what was called chronic asthmatic bronchitis.

INFANTILE CEREBRAL PALSY.*

A. C. Cotton, A.M., M.D., Chicago, says: "Under infantile cerebral palsy I would include all conditions of impaired function due to cerebral lesion, even if the only symptom be mental deficiency or epilepsy.

It will be seen that an extremely wide range of disorders will be thus brought into one clinical group, which would include the restricted congenital spastic rigidity of Little,the cerebral type of hereditary spastic paraplegia described by Freund, Erb, Sachs, and others, as well as the lighter forms in which but slight evidence of any paresis is to be discovered at the time of examination.

The following 25 cases, save 1, are selected from my clinical records of the past year as fairly illustrative of the majority of the common types of infantile cerebral palsy.

Sex.—Of this collection 18 are females and 7 males. The majority of writers on this subject have stated that more boys are affected, although Osler reported that he found no difference in the sexes, and Gowers' cases showed more girls than boys.

Time of Onset.—The table shows that the probable commencement of the disease dates from or before birth in 17, while in 5 of the remainder the symptoms developed during the first year. This agrees wlth the findings of others. who report that the large majority occur under 1 year. It would seem to corroborate the opinion that the younger the infant the greater the damage done; the more immature the brain, the more is its development likely to be interfered with. Collier, however, holds that tissues of the young have more inherent vitality for repair than do those of later life.

Exciting Causes.—An analysis of the exciting causes from the clinical histories gives: Accidents of birth, 7 (28 per cent); accidents, infections, or autoinfections during infancy and childhood, 7 (28 per cent).

Form.—The high percentage of diplegias in this table 7 (28 per cent) out of 25, attracts our attention. In the large number of cases selected by Sachs and Petersen the diplegias form only 15 per cent.

Convulsions.—Eighteen (72 per cent) gave histories of convulsions during some part of the disease. In fact, it is most frequently for this symptom that the child is brought to the clinic.

Mental Condition.—As to mentality, it is seen that out of 11 double-sided lesions 7 are idiots, 2 others are mentally impaired, while only 1 is nearly normal. Out of the 8 hemiplegics only 3 are idiots, 5 more or less impaired, and 1 nearly normal,which shows the preponderance of damage from lesions affecting both sides of the brain.

Size of Head.—That over half are microcephalic merely emphasizes the well-known fact that there is an arrest of brain growth in these cases. In fact, the same arrest may occur in the hydrocephalic, It is nothing more than fair to call attention to the fact that some of these cases were

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* Abstract of paper read before Section on Pediatrics at the American Medical Association, Atlantic City, June, 1900.

TABLE OF CASES.

Nos.	Names.	Age.	Sex.	Etiology.	Exciting Cause as Given by Family.	Form of Paralysis.	Spasticity.	Contractures.	Convulsions.	Mental condition.	Size of Head.	Reflexes.	Strabismus.	Ptosis.	Irregular movements.	Speech absent, limited or difficult.
1	Edith N.	10 yrs.	F.	Prenatal	Dentition	Diplegia	Present	Present	Yes	Idiot	Microcephalic	Exaggerated	No	No	No	Absent
2	Clara H.	10 "	"	....	Unknown Weight at birth 4 lbs.	"	"	"	"	"	"	"	Yes	Yes	"	"
3	Valeria D.	5 "	"	Natal	Long labor and forceps.	"	"	"	"	"	"	"	No	No	Choreic	Limited
4	Maud B.	3 "	"	....	Premature (8 mos.) Dystocia.	"	"	"	No	"	"	"	Yes	"	Athetoid	Absent
5	Mattie R.	10 "	"	Prenatal	Dystocia and forceps weight 2½ lbs.	"	"	"	Yes	Nearly normal	"	"	"	Yes	Athethoid, choreic and associated	Difficult
6	Clara H.	4 "	"	Prenatal	Mother had pneumonia during gestation weight 5 lbs.	"	"	"	No	Impaired	"	Impossible to detect	No	No	Choreic	Difficult and slow
7	Dora S.	3 "	"	Postnatal	Fall at 1 year	"	Very slight	Very slight	"	Nearly normal	Macrocephalic	Exaggerated	"	"	No	Absent
8	FlorenceH	11 "	"	Prenatal	Asphyxia.	Right hemiplegia	Absent	Absent	Yes	Impaired	Microcephalic	Normal	"	"	"	Limited
9	B. L.	8 "	M.	Natal	Long labor forceps and asphyxia	R. "	Present	Present	"	"	Normal	Exaggerated	"	"	Intention tremor	"
10	Joe S.	10 mos.	"	Natal	Dystocia Weight 14 lbs (?)	L. "	"	"	"	....	Macrocephalic	"	Yes	Yes	No	Too young
11	Lillie B.	6 yrs.	F.	Prenatal	Unknown	R "	"	"	No	Idiot	Microcephalic	Impossible to detect	"	No	"	Absent
12	Edith C.	3 "	"	....	Meningitis First year.	" R.	Slight	Slight	Yes	"	Macrocephalic	Exaggerated	"	Yes	"	"
13	Della S.	8 "	"	Postnatal	Accident at 2 years	R. "	Present	Present	"	Impaired	Normal	"	No	No	"	Limited
14	Herbert C.	25 "	M.	....	Meningitis at 6 mos.	R. "	"	"	"	"	Macrocephalic	No record	Yes	"	"	"
15	Annie D.	3 yrs. 8 mos.	F.	Prenatal	Pneumonia at 4 mos.	R. "	"	"	No	Nearly normal	Normal	Exaggerated	"	"	"	Did not begin to talk until 3 yrs. old
16	Celia C.	9 yrs.	"	Postnatal	Meningitis at 9 years	L. "	"	"	Yes	Impaired	".	"	No	"	"	Taciturn
17	Eva T.	4 "	"	Prenatal	Unknown	Paraplegia	"	"	No	Idiot	Macrocephalic	"	Yes	"	"	Very limited
18	Joe H.	6 "	M.	Prenatal	....	"	"	Absent	"	Impaired	Microcephalic	Normal	No	"	"	"
19	Earl B.	13 mos.	"	Prenatal	Meningitis at 3 mos.	"	Absent	"	Yes	Idiot	Macrocephalic	Exaggerated	Yes	"	"	Too young
20	Rose S.	3 yrs.	F.	Natal	Forceps Weight 5 lbs.	"	Present	"	"	"	Microcephalic	"	No	"	"Head-banger"	Absent
21	Mamie Q.	10 "	"	Postnatal	Meningitis at 1 year	Absent	Absent	"	"	Nearly normal	Normal	No record	"	"	Choreic	Normal
22	RudolphP.	5½ "	M.	....	Digestive disturbances at 5 years	"	"	"	"	Idiot	Microcephalic	Normal	"	"	No	Limited, repeats same word 6 or 7 times
23	Alga G.	4 "	"	Prenatal	Digestive disturbances at 1 year	"	"	"	"	Impaired	"	Impossible to detect	"	"	"	Limited
24	Esther R.	2½ "	F.	....	Catherization at 1 day	Facial and ocular	Present	Present	"	Idiot	"	Impossible to detect	Yes	"	"	Absent
25	Madie H.	3 "	"	Postnatal	Fall at 1 year	None	Absent	Absent	"	"	"	Normal	No	"	"	"

seen so early after the onset that added time would doubtless show a still larger number of of proportionately small heads.

IRREGULAR MOVEMENTS.—The small number of patients (2) exhibiting athetoid movements is unusual and these were both found in diplegias. This is contrary to general observation.

DYSPHASIAS.—As might be expected, of dysphasia more or less marked seems to be the rule. It is interesting to note that the cases showing improvement in speech, after complete arrest, were hemiplegic. This is suggestive of the utilization of the unaffected side of the cerebrum, which come to the relief of aphasia caused by lesions occurring in early life. Of the 7 cases of diplegia 4 showed permanent dysphasia, one can say but a few monosyllables, one is slow of speech and one has difficult speech from paresis of muscles required in vocalization. In this last case, Mattie K., it may be mentioned that the mentality shows but slight if any permanent impairment. This is proved by the fact that she learned readily the fortnight she was sent to school, and that she is bright and useful around the house. The interesting feature of this case is the escape from mental impairment in a case of diplegia presenting nearly all of the typical symptoms, viz., spasticity, contractures, convulsions, microcephalia and strabismus.

In the case of B. L., with a history of long labor and forceps delivery, followed by eclampsia for five days, child asphyxiated for three hours, right hemiplegia, spasticity, contractures, exaggerated reflexes and some mental impairment, we have a marked intention tremor, which with the slow, monotonous speech is suggestive of multiple sclerosis of the cord, but lacks the nystagmus commonly associated with these lesions. Spencer found out of 130 autopsies upon still-born infants 30 with hemorrhage into the spinal cord and canal. With this in mind, may it not be fair to presume that this child suffered from spinal as well as cerebral hemorrhage?

Case 21.—Mamie Q., 10 years of age, with slight mental impairment, choreiform movements, convulsions and a history of meningitis at one year, although presenting no spasticity, contractures, paralysis, exaggerated reflexes or difficulties of speech, I have classed as a case of cerebral palsy, in which the irregular movements alone persist as evidence of brain injury. Sachs says: "The choreiform movements occurring after cerebral palsies deserve some special notice, for such conditions are at times mistaken for cases of ordinary chorea."

Case 22.—Male, five and a half years, a microcephalic idiot, with marked lalopathy and history of convulsions, is also wanting in the distinguishing symptoms as are cases 23, 24 and 25. These four cases, I believe, are properly rated as cerebral palsies under the broader classification given at the beginning of this paper. As long as we use the term "cerebral palsy" we should include thereunder all conditions in which the principal etiologic factor is evidently a brain lesion, affecting motor, speech or intellectual areas, whether due to thrombosis, embolism hemorrhage or meningitis, resulting in sclerosis, effusion, growth or porencephaly.

FOREIGN PEDIATRIC JOURNALS.

Abstracts of all Original Articles Appearing in Foreign Journals Devoted to Pediatrics

ANNALES DE MÉDECINE ET CHIRURGIE INFANTILES, MAY 15, 1900.

1. **Purpura in Children with Malaria.**—By Dr. L. M. Spolverini (Reprinted from the Statistical Report of the Pediatric Clinic in Rome, 1896–97, pp. 92–80). The writer has studied the clinical and bacteriologic sides of the relationship of purpura and malaria and draws the following conclusions from eleven cases which he describes in detail:

1. Purpura simplex is intimately connected with acute diseases of the gastrointestinal tract.
2. Purpuric spots disappear or diminish with the amelioration of the gastrointestinal trouble.
3. The purpura has always appeared within a few days of the beginning of the intestinal infection.
4. Malaria or its sequelæ must be considered as predisposing factors to purpura.
5. The bacteriologic examinations of the purpuric spots by the new method devised by Neufeld have given only negative results, and the spots may therefore be regarded as due to the action of a toxin.
6. Serum diagnosis, i.e., the agglutination test, in the proportion of 1:50 was always positive in the hands of the writer.
7. Treatment with anticolic serum has proved to be very efficient both against the intestinal affection and against the purpura itself. Hence the toxins of the bacterium coli are the cause of purpura.
8. This serum has never produced any unfavorable effects.
9. More or less accentuated indicanuria was a constant symptom in children.
10. The patients recovered rapidly from the purpura as soon as the intestinal condition was cured.

2. **Hygiene of the School.**—By Dr. Delobel (continued). In this article the writer considers the diseases of school-life, such as myopia, scoliosis, headaches, scrofula, intestinal and cystic atony, contagious diseases, etc. He emphasizes the necessity of medical supervision of the schools.

KINDERARZT, JUNE, 1900.

1. **Osler's Milk-powder, A New Infant Food.**—By Arthur Tripke. The writer does not give the composition of the infant food he recommends. He does not forget to name the manufacturer.

2. **Report of the Proceedings of the Eighteenth Congress for Internal Medicine at Wiesbaden, April 18–21, 1900.**—By Dr. SONNENBERGER. The subjects discussed on the first day of this Congress do not bear upon diseases of children.

3. **Report of the Twenty-ninth Congress of the German Surgical Society in Berlin, April 18–21, 1900.**

REVUE MENSUELLE DES MALADIES DE L'ENFANCE, JUNE, 1900.

1. **The Shape of the Skull in Hydrocephalus.**—By FELIX REGNAULT. The forms of craniums found in hydrocephalus are as follows: (1) Brachycephalic. The transverse diameter of the skull being shorter than the occipito-frontal increases more in proportion to the latter. The brachycephaly is the more marked the more intense the hydrocephalus and the younger the child. It disappears partly, but never entirely in adults. In addition to the disproportion of diameters, the brachycephalic skull shows the following alterations in hydrocephalus: (a) Prominence of the parietal, frontal and occipital bosses. The cause of this prominence of the bosses is that these places ossify earlier than the rest of the cranial bones, and when the fluid in the skull presses outward they form convexities projecting above the membranous portions of the bones. (b) Asymmetry of the cranium. This deformity is produced by the position of the child's head during sleep. The corresponding posterior portion of the occipital bone is depressed and the parietal boss of the same side is pushed forward so that it is anterior to the corresponding eminence on the other side of the skull. The writer found post-mortem that the side of the brain that corresponded to the compressed half of the skull is heavier than the other, which is more markedly dilated by interventricular fluid. (2) Rare forms. Acrocephaly, scaphocephaly, prominence of the middle of the forehead, prominence of an additional bone in the place of the anterior fontanelle. The cause of these anomalous formations is always some alteration in the process of development or ossification.

Two Cases of Blenorrhagic Arthritis in Children.—By J. HALLE. The first patient was a girl, aged 7 years, in whom a gonorrheal vulvo-vaginitis was followed by arthritis of the sternoclavicular joint. For several days the phenomena of inflammation were very severe, and it was feared that the pus would rupture externally. The acute symptoms subsided, however, and the child recovered. The treatment consisted chiefly in irrigations of the vagina with antiseptic solutions and of cold applications to the joint. The second patient was a girl, aged 5 years. She entered the hospital with symptoms of hip disease. The co-existence of gonorrheal vulvo-vaginitis, however, pointed to the blenorrhagic character of the swelling. The treatment was essentially the same as in the first case and the patient recovered completely after several weeks.

The Exanthematous Form of Infantile Typhoid.—By E. WEILL and CH. LESIEUR. (Continued from PEDIATRICS, Vol. X, page 158). The authors give the history of the remaining cases of typhoid which they used as a basis for this study, and conclude that infantile typhoid may be divided into three types, namely, the severe form in which the digestive symptoms and the development of the eruption occur simultaneously, the mild cases in which both exanthem and enanthem are but slightly developed, and the exanthematous form moderate in intensity, and characterized by the predominence of the eruption, the mildness of the intestinal symptoms and the benignity of the prognosis. The last form is by far the most frequent in children. The abundance of the roseola constitutes a good prognostic sign only when co-incident with the absence or mildness of intestinal symptoms, and it retains this favorable significance even in cases that appear to be severe.

ANNALES DE MÉDECINE ET CHIRURGIE INFANTILES, JUNE 1, 1900.

1. **Endopericarditis in the Course of Typhoid Fever.**—By Dr. LOUIS GUINON. The patient was a girl, aged 15 years. In the course of an attack of typhoid fever she developed acute endocarditis and pericarditis. The symptoms of these cardiac complications were accelerated and feeble pulse, bulging of the precordium, heaving apex-beat, a pericardial friction sound, and a systolic murmur at the apex. The subjective symptom pointing to the heart lesion was a persistent pain in the epigastrium, worse on pressure, less marked after applications of ice. The patient recovered and no traces of the heart complication remained. The patient's heart had been perfectly normal before the illness.

2. **Hippocrates Regarded as a Pediatrist.**—By W. TROITZKY. This article is devoted to the comparative study of the views of the physicians of antiquity and those of modern times. Only the introduction appears in this issue.

3. **Critical Review of Recent Work in Infantile Hygiene.**—By Dr. BARTHÈS.

4. **School Hygiene (continued).**—By JULES DELOBEL. In this article the writer considers physical exercise as a part of education. He emphasizes the utility of games as a means of exercise, and says that play is the form of exercise that is best adapted to the requirements of school-life. He pleads in favor of natural methods of gymnastics as opposed to artificial athletics. The use of apparatus should not be begun until the child reaches the age of thirteen. The formula for all exercises for children below this age is, according to Lagrange, who is very extensively quoted by the present writer: Motion, joy, noise. He lays stress upon attractive, amusing exercises, and says that without pleasure physical exercise for children loses its most important hygienic factor.

PEDIATRICS

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VOL. X. SEPTEMBER 15th, 1900. No. 6

ORIGINAL ARTICLES

PERI-TONSILLAR ABSCESS IN CHILDREN, WITH REPORT OF CASE.*

By L. T. ROYSTER, M.D.,
Norfolk, Va.

PERI-TONSILLAR abscess, acute parenchymatous tonsillitis, suppurating tonsillitis, quinsy, phlegmonous tonsillitis, are all terms which are used, some of them incorrectly, to signify one and the same condition, viz., a circumscribed suppurating process of the cellular tissue, external to, behind or surrounding, but not involving the tonsil itself, except in certain cases of co-existing infection. This condition is a rather rare one in children, occurring—according to Casselberry, of Chicago—to the extent of only 3 per cent in this class of patients.

Peri-tonsillar abscess occurs as a local infection, consequent upon acute catarrhal inflammation of the pharynx, upon the acute infectious diseases (especially measles and scarlet fever), and also rarely as a complication of retro-pharyngeal abscess, especially that form arising from tubercular caries of the cervical vertebræ. The microörganism is usually the staphylococcus. Among the predisposing causes may be mentioned chronic tonsillitis, adenoid growths, and the rheumatic diathesis. The idea of idiopathic abscess has been discarded.

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* Read before the Norfolk Medical Society, May 9, 1900.

A point of interest is the far greater frequency of retropharyngeal abscess. The same authority accounts for this by the fact that the lymph-nodes of the posterior wall of the pharynx bear the greater part of the burden of draining the tonsils, pharynx and other contiguous parts.

The general symptoms do not differ markedly from those of acute follicular tonsillitis, except that in cases of abscess the temperature is usually lower and the depression less pronounced. The local symptoms, however, are noticeably different.

Not infrequently for a day or so before any positive diagnosis can be made the patient will exhibit difficulty in swallowing, the pain being so intense at times that the child will abandon the effort entirely. Torticollis is common, and a fixed lower jaw is an almost invariable symptom. In infants the foregoing symptoms and in older children the intense pain complained of are much more marked than the examination can account for. This very fact should put the practitioner on his guard.

Very much less can be ascertained at this, or in fact any stage, by inspection than by palpation. In the early stage the throat may not be much inflamed, nor very much, if any, swelling be detected. However the local symptoms rapidly increase, and very soon by careful comparison of the two sides of the pharyngeal wall by palpation the induration can be detected, for this is almost invariably a unilateral affection.

The swelling pushes the tonsil inward or forward, according to the seat of the suppuration; the glands of the neck become involved, if they have not been so before, and the swelling is prominent *below* the angle of the jaw. The tonsil may be pushed so far over as to close the isthmus of the fauces entirely and thus render the ingestion of food impossible. The hyperemia and edema of the pharynx are marked and the production of thick tenacious mucus abundant.

The complications and dangers are in most cases fortunately slight, but in the severe forms they may become alarming, and in some instances rapidly fatal.

The edema which, as mentioned, is a prominent symptom, rarely has involved the glottis, causing death. Spontaneous rupture has caused, in the very young, suffocation. By far the most important danger is from perforation of one of the larger arteries. This accident seems specially apt to occur in this form of abscess. A case has recently been reported in which several hemorrhages occurred from the throat after spontaneous rupture of a peri-tonsillar abscess. The last hemorrhage occurred six days after rupture and terminated fatally. Autopsy showed a large opening into the internal carotid artery.

The treatment is surgical. As soon as the presence of pus is positively determined, a vertical incision, usually at the most prominent point, is made and the cavity drained.

CASE.—A. S., aged 20 months, first came under observation October 11, 18—, in excellent condition, with the exception of a slight bronchitis. The family history was unsatisfactory, but as much as could be ascertained was good. Previous history of patient good. Ill-defined illness of short duration at age of 15 months. On October 20th slight enlargement of cervical glands of the left side was noticed. On November 4th child developed nasal diphtheria of sero-sanguineous type, running a characteristic course and made a good recovery. Culture clear on November 11th.

On November 15th the temperature rose to 103°, examination revealing marked tenderness over the enlarged glands, which had remained the same since first noticed to be enlarged. Next morning the tonsil of that side was pushed more than half way across the faucial isthmus, the breathing was difficult and the neck swollen and tense, though careful palpation elicited deep-seated fluctuation.

About mid-day the child seemed suddenly better, but vomited several times; the nature of the vomitus was not reported by the nurse.

In the afternoon the abscess at the angle of the jaw, which by this time had become very much softer, was opened and only a small amount of pus obtained.

On irrigating the cavity with peroxide of hydrogen the child gagged and coughed up a large quantity of foam. The irrigation was repeated several times with sterilized water, and in every case the water flowed freely from the mouth.

It is clear that the abscess was discharging into the pharynx as well as through the external opening, the rupture having occurred about the time that the child vomited at noon.

A thorough examination of the throat was then made. Owing to the swollen condition of the parts nothing could be felt, but with the aid of the laryngeal mirror the point of discharge could be seen behind the tonsil. The use of the probe was deemed inadvisable. Complete recovery followed.

The abscess contained staphylococci.

Uric Acid Diathesis:

Sod. benzoate	0,2—0,3
Lith. benzoate	0,03—0,05
Salol	0,10 to 0,20

Mix. Make one powder. Direct: One to four times daily. —*Centralbl. f. Therapie.*

Hereditary Syphilis of the Nose and Throat.—In addition to the constitutional treatment, attention to the bowels, diet and general health, Casselberry, in the "American Text-book of Diseases of Children," recommends the following for local treatment of the ulcers:

℞	Iodin	of each ʒi
	Tannic acid	
	Potassium iodid	
	Glycerin	f℥ss
	Water enough to make	f℥i

Mix. Direct: Apply with cotton swab.

Mouth Wash:

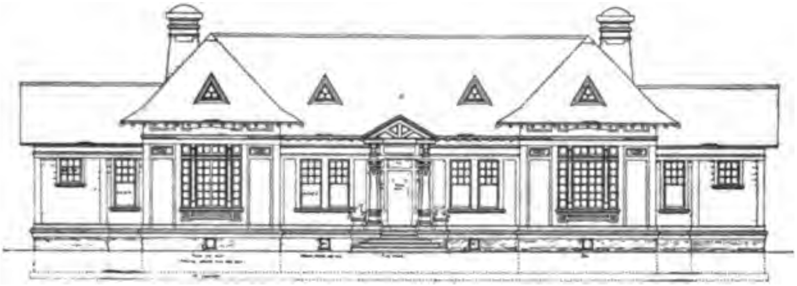
℞	Thymol	gr. vi
	Borax	ʒss
	Alcohol	fʒii
	Dist. water to make	Oi

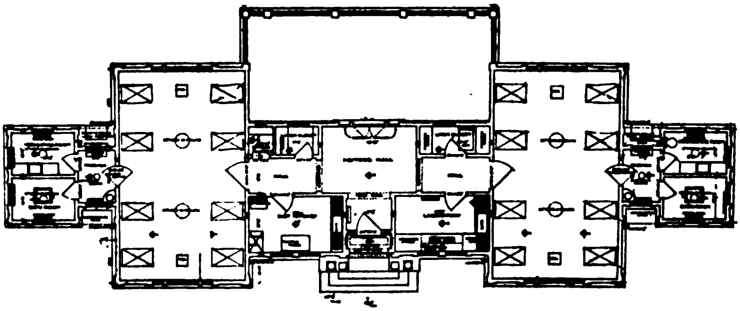
—Dawson Williams.

THE LEWIS MEMORIAL COTTAGE FOR ST. JOHN'S GUILD, AT NEWDORP, STATEN ISLAND, N.Y.

WALKER & MORRIS, ARCHITECTS.

THIS building forms one of a group of hospital buildings, and is a one-story structure devoted to children from one to three years old suffering from summer complaints. The cottage has an irregular plan, as will be seen in the accompanying cut, its outside dimensions being 40.0 x 103.0 feet. The foundation is of brick, and the superstructures of frame, covered with cedar shingles left natural.





The entrance is in the center and opens into a visitors' hall, which has a large casement window opposite the entrance door, leading to a spacious covered piazza 16.0 x 36.0 feet, which is enclosed by mosquito-screens. As this piazza forms a large room, convalescent children may be kept out of doors in favorable weather. This piazza faces south and catches the prevailing breezes.

On either side of the visitors' hall are large linen closets, which are conveniently placed next to the wards, and on one side is a nurses' closet. To the right is a laboratory 8.0 x 13.5 feet.

To the left of the entrance is a diet kitchen corresponding to the laboratory and of the same dimensions.

Symmetrically spaced with reference to the entrance are two large wards approached by halls 5 feet wide. These wards are 18.0 x 30.0 feet, with ceilings 14 feet high. Each ward is fitted with only eight cribs, giving about 1,000 cubic feet of air to each patient.

A special feature of the arrangement is the isolation of the plumbing, for the bathing and irrigation of the children, from the wards. It is confined in two extensions at extreme ends of the building and connected to the wards by passageways.

In each passage under the rear window is a chute for soiled linen, which leads to a large box lined with galvanized iron. The linen can be removed from the outside, so that the attendant does not enter the cottage.

From the passage are doors opening into the irrigating rooms and bathrooms.

The bathroom is the same size as the irrigating room and is provided with a porcelain-lined roll-rim child's bath in the center of the room.

The heating and ventilation have received special consideration. The steam is brought to the cottage from boilers in the power-house on the grounds.

The wards are heated by direct-indirect radiation, giving a constant supply of heated fresh air.

All of the other rooms, halls, and passages are heated by direct radiation.

The bathrooms, irrigating rooms, passages, and diet kitchen have registers in the ceiling, which connect by galvanized iron pipes of ample capacity with large ventilators in the roof so that foul odors are immediately carried off.

There is a 250-gallon boiler in the cellar, so that a constant circulation of water can be supplied to all plumbing fixtures at the same time.

The building is lighted by electricity.

The first floor is covered with maple flooring; the doors, trimmings, etc., are of white pine.

All corners and angles are rounded. The interior woodwork and plaster walls and ceilings are painted with porcelain enamel paint.

The present intention is to use the building only in the summer months, but provision has been made for ample heating capacity to 70° in the coldest weather.

The cottage is a gift of Mrs. Frederic Elliott Lewis, in memory of her son, Frederic Chandler Lewis.

Mouth Wash:

℞	Thymol	gr. iii
	Sodium benzoate	ʒiv
	Tincture eucalyptus	fʒii
	Distilled water to make	Oi

—Dawson Williams.

Mouth Wash:

℞.	Menthol	1,0
	Tincture of krameria.	
	Alcohol	of each 50,0

Mix. Direct: Half teaspoonful in a glass of water.—*Centralbl. f. Therapie.*

Stomatitis:

℞	Tincture krameria.	
	Tincture nutgalls	of each 12,0
	Resorcin	3,0
	Menthol	0,25

Mix. Direct: Apply to gums with brush twice daily.—*Centralbl. f. Therapie.*

A NEGLECTED CASE OF POTT'S DISEASE OF THE SPINE UNDER TREATMENT WITH A NEW SPINAL BRACE.

By Edward A. Tracy, M.D.,
Boston.

THE progress of both the art and science of medicine is gloriously illustrated in our present knowledge of spinal caries. It is not so many years ago that a diagnosis of this affection was only made upon the appearance of deformity, and when the indications of disease were so plain that "he who ran might read" them.

The gross pathological anatomy of spinal caries was investigated and described so well by Pott about a century ago that the disease bears his name to-day. The recognition of its tubercular origin is, of course, comparatively recent. To American practitioners, and especially to the late Henry G. Davis, we are indebted for the subtler methods of diagnosing the disease in its incipiency. These symptoms and signs, which shall not be enlarged upon, are: Change in the gait of the patient, night cries, muscular rigidity, and pains referred to the distribution of the nerves emerging from the cord in the immediate vicinity of the diseased vertebrae. The rational treatment of the disease we owe to Davis, Hilton, Sayre, and Bradford.

After these preliminary remarks I shall describe a case of Pott's disease, under my treatment for the past year.

Sadie V., aged 5 years, was carried to my office February 7, 1899. Her mother gave the following history of her case: Three years before, some considerable time after a fall, the child was very fretful, and a knuckle was noticed in the spine. She was then taken to the Children's Hospital, Boston. A Bradford frame was furnished her for recumbent treatment. The father of the child would not allow the frame to be used, and she had no treatment until brought to me three years after.

This case furnishes one of many examples of parental neglect that have come under my notice. Such neglect ought to be made criminal.

The child, when brought to me a year ago, was greatly deformed, a large hump being situated in the region of the eighth, ninth, tenth, eleventh, and twelfth dorsal vertebræ. The front of the chest, particularly the lower portion, projected considerably and added to the aspect of deformity. The child could not stand, and sat in a crouching position. She was anemic, and poorly nourished. Her features were similar to those described by the old writers as belonging to children with the "scrofulous diathesis,"—thick lips, dark eyes, a high, pale forehead.

For treatment it was deemed best to try the effect of gradual reduction before resorting to forcible correction. The former course was particularly indicated, for I found that by placing a book under the hump, the child being placed on her back, the body length increased by 2 inches. In other words, the amount of correction produced by a force acting on the angle of deformity, equivalent to a force represented by the child's body weight, was such as to clearly indicate the trial of a gradual method of correction.

With this end in view, a plaster jacket was carefully applied to the child, who was held in a corrected position by means of my machine for the control of the spine, described in the *Boston Medical and Surgical Journal*, October 1, 1896. It was hoped that on the removal of the plaster jacket after a month's wear another could be applied, with the spine in a more corrected position. Despite the careful padding, however, the jacket became uncomfortable on the tenth day, and was removed on the twelfth. A skin slough, over ½ inch in diameter, had formed over the most prominent part of the hump. This necessitated daily dressings for three weeks. To facilitate this treatment, a back splint was constructed from a piece of ½ inch board. The board extended from the lower end of the sacrum to the lower part of the child's neck. A hole was cut in the board about 2½ x 3 inches, so that pressure would not be made on the summit of the hump.

This splint was padded with cotton-batting and covered with cotton-cloth. Felt pads were attached to it so as to lie upon the lateral processes of the diseased vertebræ. These pads exerted pressure for the correction of the deformity when the splint was bandaged to the child's back. This simple splint allowed of the easy treatment of the skin slough caused by the plaster jacket. After about a month, when the skin had healed, a more elaborate splint was constructed, to fulfill the main object in view—the gradual reduction of the deformity. This splint was made by cutting a piece of ½ inch board in the manner already described, and attaching to it, above and below, two pieces of wood plastic material moulded upon the child's body; the one above moulded so as to embrace the chest, the one below moulded to embrace the upper pelvic bones. The splint thus became a brace, but differed from the ordinary braces in the important particular that it could only be applied in one way—the right way.

The felt pads attached to the splint so as to press on the lateral processes of the diseased vertebræ were reinforced by removable pads of absorbent cotton.

Before applying the splint a layer of absorbent cotton was placed over the back portion of it so as not to disturb the compress pads.

The child wears a tightly fitting undershirt under the splint. The splint is simply bandaged to the child while lying in its embrace, the bandage being carefully applied around the pelvis and the upper chest so as to make the arms of the splint firmly grasp the body above and below the deformity. It is easy to understand how the pressure-pads correct the deformity, and how this correction is under our control. The practical worth of this simple method of reducing the deformity in this case is shown by the measurements. After eight weeks' treatment the child has gained 7½ inches in length.

At present the child walks erect. There is a considerable knuckle, which, I fear, cannot be reduced as much as it might if I had a more tractable patient—one in which recumbency could be insisted upon. The apparatus described is removed every week and snugly reapplied. In this manner the correcting force is controlled by changing and reinforcing the pressure pads, and the skin is kept clean, a very important point when pressure is applied to it.

CONCLUSION.

A brace is described that can be used for the gradual reduction of the deformity in suitable cases of spinal caries. An index to such cases is the amount of lengthening that occurs when the patient is lain gently on the hump, it being supported upon a raised surface.

The amount of pressure exerted by the brace to correct the deformity is under the control of the attendant.

The brace permits of the hygienic care of the skin, an important point where pressure is applied to it.

The brace can be readily constructed by the practitioner.

353 Broadway, Boston.

Acute Nephritis in Children.—Danforth (American Text-book of Diseases of Children) gives the following formula to meet the various indications of acute nephritis:

℞ Tr. aconiti	fʒss
Codeinæ	gr.ii
Potass. citrat	℥iii
Glycerin	f℥ii
Aq. cinnamomi	ad f℥viii

M. Sig.—A teaspoonful every two hours in half a glass of pure water.

Acute Catarrhal Laryngitis.—Perier (*Annales de Méd. et Chir. Infant.*, August 1, 1900), gives the following mixture in simple catarrhal laryngitis in children:

℞ Tincture of aconite	5 to 10 drops
Sodium benzoate	½ to 1 drachm
Cherry laurel water	2.5 fl. drachms
Syrup of codeine (French codex.....gr.i to ℥i of syrup)	1 to 2.5 "
Syrup of orange flowers	5 "
Mucilage of acacia to make	30 "

Mix. Direct:—One to two teaspoonfuls every hour.

EDITORIAL COMMENTS

"Notes on the Mosquitoes of the United States"

The attention of alert physicians throughout the entire country will be attracted to the recent Bulletin of the U. S. Department of Agriculture on the above subject by Dr. L. O. Howard, Entomologist. It is complete, scientific and practical. It contains an analytic synopsis of all the genera and species of the American Culicidæ, and brings together within small compass a vast amount of important information heretofore almost inaccessible to general medical readers unfamiliar with entomology. Besides this Dr. Howard has produced a delightful original account, with many beautiful and accurate illustrations, of the life-history of the *Anopheles quadrimaculatus*, and has appended some clean-cut illustrations of *A. crucians* and *A. punctipennis*—which two, with the first-mentioned, are the only native species of Anopheles thus far discovered. Proceeding further, the author discusses completely and exhaustively the remedies for mosquitoes, and brings the whole subject of the eradication of malaria completely up to date. This publication is perhaps the most important of the year on the mosquito-malaria theory, and no physician who wishes to be of use to his community should be without it. It is to be had for the asking by addressing the Department. The subject should not be dismissed without extending to Dr. Howard sincere congratulations upon a production at once so exhaustive and so fascinating. B.

A New Cancer Parasite

In the *Medical Record* for July 7th, Gustav Eisen, Ph.D., Curator of the California Academy of Sciences (Biological Department) has published a "preliminary account" of a new cancer parasite.

The name he proposes for the new microörganism is *cancriamœba macroglossa.* He claims that the failure to find it thus far has been due to the fact that carcinomatous tissues have never been fixed while *warm.* If fresh, warm cancer-tissue be dropped into a warm fixing solution (potassium bichromate, glacial acetic acid and water in proper proportions) and afterwards cut and stained, according to directions (which are explicitly and clearly stated), a peculiar amœba is to be found lying free in vacuoles in the cancer nests. This amœba has characteristic properties and structure, and was never missed by the observer in cancer tissues properly prepared.—These facts will, of course, have to be reaffirmed by numerous other observers; till then it will be unsafe to hazard opinions or deductions. Meanwhile, however, it is a fair subject for editorial comment that this line of work is in progress; and it is to be hoped that the author will soon be able himself to furnish convincing evidence that the parasite described has or has not a causal relation to cancer. There is perhaps no subject in modern pathology that has proved so baffling as the etiology of cancer,—none that has afforded so little tangible result of the year-long labors of many of the best equipped and most patient workers in scientific medicine. New propositions are therefore not to be received either with silence, or with ridicule, or with ungrounded praise, but with fair-minded reserve and willingness to wait for further developments of the investigation.

B.

Otitis Media in Infants Again

In the editorial column of Pediatrics several months ago there appeared a review of a German monograph on the *otitis media* of infants. It was remarked at that time that the prognosis *quoad vitam* is good, but that too little has been reported upon the dubious prognosis for the perfect restoration of the hearing in the affected ear. There seems to be a disposition among mothers and doctors still to put a certain measure of faith in the old wives' fable about the danger of "stopping" an otorrhea; at all events the affection seems to be on the increase this summer among the East Side infants of this city. There are plausible grounds for believing that many of the cases of apparently acute otitis in measles and scarlatina and diphtheria during later childhood are really relapses of old catarrh contracted in infancy. Among the dull and careless mothers of the tenements there seems to be no way of producing conviction that the hearing of the baby's ear may be permanently injured or lost through neglect of this trouble. Some active woman of humanitarian purpose could accomplish no little good by a literary "propaganda" on this subject, and this not only among the patients but also among the teachers, the nurses, the kindergartners and *a few* of the physicians in the tenement regions of our metropolitan city. B.

Jaundice in the Newly Born.—Musser uses the following treatment in mild jaundice: The bowels must be opened by a mild laxative, such as calomel or grey powder, in minute doses, or a few grains of calcined magnesia; the kidneys should be kept active by nitre or citrate of potassium well diluted; the child should be aroused to be fed, and the effects of the jaundice upon the nerve centers should be carefully watched:

℞ Ammonii chloridi..................gr. i
Syrupi acaciæ.......................f℥ss

M. Sig.—Teaspoonful every two hours.

After Typhoid.—In the *Medical Summary*, Dr. W. R. D. Blackwood, of Philadelphia, says that the following combination has proved very successful in his hands:

℞ Hyd. chlor. corros.................gr. j
Elix. calisaya.....................f℥iij

M. Sig.—A teaspoonful four times a day.—*Columbus Med. Jour.*

CORRESPONDENCE.

SOLANUM CAROLINENSE IN TRISMUS NASCENTIUM.

To the Editor of PEDIATRICS.

DEAR SIR:—On June 18, 1894, I delivered Mrs. F., aged about 35 years, of an unusually strong and well-developed boy. The labor was of about three hours' duration. The family are Germans and live in a well-drained and healthy locality in the country, about four miles from the city.

The habits of both father and mother are of the best, neither of them ever having been given to excess of any kind.

The clothing of the mother and bed, as was the general character of the whole house, was clean and neat; so that so far as any external causes were concerned there was no reason to suppose that trismus nascentium would develop. The delivery was accomplished very easily .and without special hurry, as I had given chloroform inhalations; the pains were severe and frequent, and had rendered my patient unconscious at the moment the head was born, so that I do not think any injury to the spinal cord could have happened.

On the ninth day I was asked to see the baby's mouth, which was sore. I attempted to do so, but found I could not open the jaws. I even tried, without success, to gag him with the handle of a spoon. He could not nurse. The next day when I saw him he presented all the symptoms of a well-developed case of trismus. All the voluntary muscles were in a state of tonic spasm. The features were pinched and drawn to give the appearance of old age to the face. If you lifted his heels, you raised him on the back of his head. The bowels were constipated; urine was almost entirely suppressed; abdomen as hard as a board. In all the cases I have seen of this disease (nine in all), the patients have been able to swallow. I told the parents what was the trouble, and did not hold out any hope of recovery. I prescribed first a teaspoonful of sweet oil, which cleared out the bowels;

then for the kidneys I gave minute doses of pilocarpin, and for the convulsive condition a mixture of tinct. solanum Carolinense ʒi to ℥i of syrup and water, ʒi to be given every three hours. The solanum not having the desired effect, I decreased the time to two hours between doses, then doubled the strength and later made it ʒiv to ℥i. In other words, I increased the dose until I put my patient to sleep, and I kept him asleep for two weeks, only allowing him to arouse enough to have some milk, which was drawn from his mother's breast and poured into his mouth. In that way I nourished him, and kept him under the influence of the solanum until he relaxed. The relaxation occurred first in the jaws, so that he could nurse; then the arms lost their rigidity, and the hands, which had been so tightly closed as to require a roll of lint in them to prevent the nails cutting into the palms, opened; then the abdomen softened and the hips and thighs relaxed so that the mother could set him on her lap. It was quite noticeable that the rigidity began at the head and spread downwards, and the relaxation followed the same course. Altogether the attack lasted between three and four weeks.

I have since seen two other cases of trismus nascentium, one of which occurred in a colored family, where everything as to hygiene and cleanliness was the reverse of the surroundings in the case just described. The baby had been sick 24 hours before I saw it, and only lived twelve hours afterwards, though I tried to put it on the same line of treatment. The other case was in an ignorant German family, who did not push the solanum as I directed, but stopped it as soon as the child was slightly under the influence of the drug and let him come out. He also died. The tincture of solanum was made for me by our local druggist from the undried berries, and is much preferable, I believe, to either the fluid extract or a tincture made from it.

While one case is, of course, not enough to warrant any decided claims for this drug in this disease, yet the cases die regularly when treated with other sedatives, and this being an apparently perfectly harmless remedy, I think it is worthy of a fair trial.

JNO. W. MARCY, M.D.,
Merchantville, N.J.

SOCIETY REPORTS

PHILADELPHIA PEDIATRIC SOCIETY.

Stated Meeting March 13, 1900.

The President, Dr. ALFRED STENGEL, in the Chair.

Dr. D. J. MILTON MILLER presented a girl of 8 years with **Tuberculous Cavity**, and exhibited a skiagraph. For one and a half years she had had cough, fever, and progressive failure of health. There had never been hemoptysis, but expectoration had been marked. The sputum contained tubercle bacilli. When presented there were signs of a cavity at the right apex, viz., cracked-pot sound, cavernous breathing, metallic râles, and pectoriloquy. These signs were heard at the supraspinal fossa and above and below the clavicle; they were sharply limited by the upper border of the second rib. At the left apex there was dullness, with bronchial breathing and crackling râles. The remainder of both lungs gave the signs of a general bronchitis. The skiagraph exhibited showed the above conditions fairly well.

The case seemed interesting, first, because of the comparative rarity in patients so young of the signs of chronic ulcerative phthisis; second, because it seemed to be a case of direct infection. The girl's father had died of phthisis, and during his illness the patient had been his constant companion, sleeping in the same room with him. Within a year of his death the girl developed her present illness. Third, because of the rapid improvement following the child's removal from its squalid home to the hospital ward. Under the better hygienic surroundings and substantial food obtained there the patient had gained about eight pounds in twelve weeks, and this was in a mixed ward in which there were medical and surgical cases, where adult phthisis almost always deteriorates. The only medication had been increasing doses of creosote, of which the child was taking six drops three times a day.

Dr. Miller also presented a profoundly anemic child of 2½ years. The patient had been well with the exception of measles at four months, until it was weaned at the close of the first year, since which time its present condition had gradually developed. Neither cough, vomiting, marked diarrhea, nor other digestive derangements had ever been present. There had been simple increasing pallor, languidness, loss of appetite, and two or three bowel movements daily. There had never been any nose-bleed. The spleen, liver, and lymphatic glands were not enlarged. Slight evidences of rickets were present. The teeth, all of which had emerged, were quite carious. The child urinated frequently. Examination of the urine and blood by Dr. A. Hand, Jr., were as follows:

1. *Urine*—Distinct albumin; sp. gr. 1010; no sugar; alkaline; bacteria; no casts. *Blood*—R. B. C. 3,984,000; W. B. C. 24,000; hemoglobin 23 per cent. No nucleated cells; no poikilocytosis.

2 (Two weeks after the above). *Urine*—Albumin, a trace; sp. gr. 1010; no sugar; alkaline; leukocytes; no casts. *Blood*—R. B. C. 3,900,000; W. B. C. 12,000; hemoglobin 23 per cent; no nucleated red cells; slight poikilocytosis. Differential count: Mononuclears 34 per cent; polymorphonuclears 43 per cent; transitionals 6 per cent; lymphocytes 15 per cent; eosinophiles 2 per cent.

The blood condition, therefore, was that of a chloroanemia with slight leukocytosis. The absence of splenic and lymphatic enlargement, of nucleated red cells, and of changes in the cells themselves would remove the case from the category of the primary anemias. The underlying cause of the anemia is difficult to determine. The onset of the condition with weaning, the slight looseness of the bowels, the carious teeth, and coated tongue, would seem to point to digestive disturbances as the primary factor, as the evidences of rickets are so slight, and there is continued absence of casts. Although the urine is slightly albuminous and the micturition so frequent, these do not seem to indicate a nephritis severe enough to produce so profound an anemia. Future study of the case may perhaps clear up this question.

DISCUSSION.

Dr. **Alfred Stengel.**—It has always seemed to me that the signs of cavity are among the most difficult of all physical signs of interpretation in adults and certainly in children. If there is a clear depression and if the characteristic and typical signs of cavity present in cases of large cavities are found, the diagnosis is very easy, but it has always seemed to me that the diagnosis of small cavities, as often made, is very risky, and is perhaps made very much more often than is justified.

In the case of children I think this difficulty is heightened, because apparently physical signs of cavity are found in children when cavities are known to be absent, as Dr. Miller has pointed out with regard to pectoriloquy and in regard to the cracked-pot sound. Attention has been called to the cracked-pot sound over the chest of children when crying, and I have had many occasions to demonstrate this to my own satisfaction. In a child of this age and of this physique I should doubt very much whether the sign could be obtained in that way. I should like to ask Dr. Miller whether this sign has been marked in the child exhibited. The importance of the diagnosis of a large cavity or even of the mere existence of a cavity in a child of this age is great.

Dr. **Miller.**—I would like to ask Dr. Stengel if he has anything to say about the case of anemia,—whether the large percentage of mononuclear cells has any significance.

Dr. **Stengel.**—I should think from the blood count the condition was undoubtedly secondary anemia, and the differential count, while it might incline to a possible diagnosis of rickets, would have only a very slight weight in that direction. It is characteristic of the blood of childhood to find mononuclear cells increased at the expense of the polymorphonuclear, and in them I do not think it points to any particular condition. It might just as well be an indication of inanition, using that term in its broadest sense, as of any disease. It is not unlikely that nephritis might be the cause. I have seen in children nephritis with albumin and without casts confirmed post mortem, and not interstitial but parenchymatous nephritis.

Dr. F. S. Pearce.—I think in regard to the second case exhibited by Dr. Miller that it is probably one of rachitic secondary anemia. The child seems to be a typical rachitic individual. There are enlarged epiphyses of the long bones of the forearm, enlarged abdomen, beaded chest, and the general aspect of the child is that of rachitis plus anemia. Under hygienic surroundings the child would probably get perfectly well.

Dr. Alfred Hand, Jr.—While this is possibly a case of secondary anemia, dependent upon either rickets, as Dr. Pearce suggests, or a gastro-intestinal condition and unhygienic surroundings, as Dr. Miller believes, we must bear in mind the results of the urinary examination and be sure that there is not a chronic interstitial nephritis. This, of course, is rare in children, but it does occur, especially where there is any hereditary influence; I believe that one case, in a child under two years, has been reported and other cases in children of from six to twelve years of age, where there has been a distinct family history. Whether this is a congenital case or not I do not know, but the child has been through one infectious disease—diagnosed measles, which might possibly have been scarlet fever with resultant nephritis. The persistently low specific gravity is the strongest feature, to my mind, in favor of this condition. Albumin does occur in chlorosis and in grave secondary anemias, and usually in chlorosis the urine is light in color but not necessarily always low in specific gravity. I have seen chronic nephritis in older children with cardiac hypertrophy and high tension pulse, the urine being always of low specific gravity. This child presents almost the same symptoms except this pallor, and yet the condition has progressed steadily. The rarity of chronic interstitial nephritis in children should not exclude it in this case.

My examinations of this patient's blood for the plasmodium of malaria were always negative.

Dr. Miller closes.—In answer to Dr. Stengel's inquiry about the cracked-pot sound, I thought it was present above and below the clavicle on deep percussion.

In the anemic child the signs of rickets, I think, are slight. There is only slight rachitic rosary, and there is but slight enlargement of the epiphyses. As to the decayed teeth, we see this condition in other diseases than rickets.

Dr. JOHN M. SWAN presented a case of **Chronic Valvular Endocarditis and Acute Nephritis Following Chorea.** The patient, a girl, was 8½ years of age when first seen. She had been treated for arthritic symptoms in 1897, and on the first of March of the same year she developed chorea. There was a soft basic murmur at the time of the first examination after the beginning of the chorea. In June, 1898, the patient presented the symptoms of broken compensation; a mitral systolic murmur, transmitted into the axilla; a mitral diastolic murmur, not transmitted; and an aortic systolic murmur, transmitted into the carotids, were heard. At that time the pulse was 142 and the respirations were 40 per minute. After a short course of treatment the patient was sent to the country, and while from home she developed an acute nephritis that was manifested by edema of the face, the hands, and the feet; by a well-marked ascites, and by 0.2 per cent albumin, and hyaline casts in the urine. There were no pleural effusions. In October, 1898, the patient had an attack of polyuria, and began to improve, so that in April, 1899, she was able to be about. In February, 1900, she was attending school and doing light household duties. The murmurs of mitral regurgitation and of aortic obstruction were still present. The urine contained 3.6 per cent urea, no albumin, no casts, and neither glucose, albumin, nor indican. The treatment was rest in bed, milk diet, hot bath every day, poultices over the renal region, and the use of heart tonics, diuretics, and purgation. The ascites was not tapped.

Dr. S. M. HAMILL.—It seems to me that the murmur heard at the aortic area is the systolic murmur transmitted from the apex. The accentuation of the first sound and prolongation of the murmur lead me to suspect a mitral stenosis as well as mitral regurgitation. At any rate the lesion seems to me to be almost exclusively of the mitral valve.

Dr. F. A. PACKARD.—From a superficial examination I should say that Broadbent's sign is present, and I think that there is a strong suspicion of pericarditis.

Dr. F. S. Pearce.—An important point in this case is the old-time question of the relation of rheumatism, chorea, and heart disease, and I think it demonstrates that the same autochthonous poison may be the cause of the three. To my mind it is not at all impossible that a good many cases of chorea are due to the rheumatism affecting the serous membrane of the brain; this, in turn, irritating the motor cortex. This child had but the one attack of chorea, but has had marked rheumatic pains many times. In a good many cases of chorea which I have watched, where pains have been a notable feature in the previous history, the children under treatment have entirely recovered from the rheumatic condition and thus become less liable to recurrent attacks of chorea. On the other hand, there are cases which we cannot associate so intimately with rheumatism—where there is no history of the pains. In these recurrence of chorea appears more frequently. It is possible that the rheumatic irritant in the latter instances simply affects the serous membrane, the arachnoid.

Dr. Swan closes.—I feel sure that the aortic systolic murmur is one of aortic obstruction. I have listened to it many times and it has been of quite a different character from the murmur heard at the mitral area. It has always been transmitted into the carotids. I want to express my thanks to Dr. Packard for suggesting the possibility of the presence of Broadbent's sign. There has never been anything in the case to suggest pericarditis to me, but pericarditis may be present.

Dr. J. H. McKee read a paper on "**A Large Sarcoma of the Kidney, which was Operated Upon, with Operative Recovery.**"

Dr. McKee.—I am sorry that Dr. Morton is not here to describe the operation. An incision was made through the left rectus muscle and this enormous mass immediately presented in the line of incision. The capsule of the tumor was densely adherent to both layers of the meso-colon. The separation proved most difficult, for there was danger of rupturing the large blood cysts which are so often found in these tumors. In spite of these, however, the operation was performed with little loss of blood, probably not more than an ounce. There was considerable shock, and normal salt solution was given subcutaneously during the whole operation, and toward the end intravenous injections were given. Dr. Morton also left two or three quarts of a saline solution in the abdominal cavity. Drainage was secured by counter incision in the loin. Some of the post-peritoneal glands on the left side were found to be distinctly enlarged and it was impossible to remove them.

Dr. George Walker has found, in a study of 145 cases, four of these children who have passed the three-year limit, one of Schmidt's, two of Abbe's, and one of Israel's, Israel's patient having lived more than six years after operation. Czerny, in 1890, reported five cases that have passed the limit of five years (?). One of Abbe's two cases (that of Julia D.) has been cited a great many times. One learns with regret that she has had a fatal recurrence after more than four years.

This specimen represents a decidedly rare form of tumor. Dr. Kirkbride, who has made a very careful study of it, is inclined to think it an endothelioma. There have been very few of these tumors,—I think three in 145 cases critically examined by Walker.

Dr. Alfred Hand, Jr., exhibited a specimen of a **Sarcomatous Kidney** removed from a child two years old. Operative recovery.

There was rapid growth, with practically no family history at all of malignancy. When operated on the child was 22 months old. It had been in the Children's Hospital about four months previously with conjunctivitis. It had seemed in perfect health and had gone out, but came back to the dispensary in July, the mother having, a few days earlier, noticed a lump in the left side. Dullness was continuous with that of the spleen. The blood examination was negative, as was the urine examination. The parents objected to operation until the rapid growth showed them that nothing else could be done. After the abdomen was opened the child was in such a bad way that Dr. Wharton was about to abandon the operation, when the upper part of the tumor ruptured, necessitating the finishing of the operation. The child recovered, and left the hospital in a month in good health. The specimen shows that the sarcoma is within the capsule of the kidney, involving the upper part almost entirely. The remaining kidney structure is atrophied and cystic.

I have since looked up the address of the family and found that the parents had been to the hospital to get a death certificate, as there had been recurrence, with death, six months after the operation.

It is my opinion, as a medical man, that operation in these cases is not only justifiable but advisable. Even if we feel almost certain that the child is going to die or have recurrence probably inside of the three-year limit we give the child a period of life with comfort, and there is the possibility that in time some one might discover by accident or design some prevention for metastasis.

Early Cough and Fever in Pneumonia:

℞	Potassii citratis	ʒvj
	Spiritus ætheris nitrosi	
	Tinct. opii camph	āā fʒiv
	Liq. potassii citratis	q.s. ad f℥vj.

M. Sig.—Dessertspoonful every three hours.—Hughes, *The St. Louis Clinique.*

Chorea.—S. D. Hopkins, in the *Journal of the American Medical Association*, reports on the treatment of nineteen cases of chorea. He has obtained the best results with antipyrin, which is given according to the method of Dr. Eskridge. The drug is given in increasing doses, the initial dose being as many grains as the child has years, and increased 1 grain a day. In mild cases the antipyrin is given in the evening, but if severe it is given three times a day. In the mildest cases the patient is allowed to sit up a part of the day, but in severe cases absolute rest in bed is enjoined. Antipyrin is not given if there is fever, or if the heart is weak. As soon as the choreal movements cease, or become greatly diminished in severity, the antipyrin is stopped and small doses of arsenic and iron are ordered.—*Ex.*

AMERICAN MEDICAL ASSOCIATION—SECTION ON DISEASES OF CHILDREN.

ANNUAL MEETING, ATLANTIC CITY, N.J., JUNE 5 TO 8, 1900.

Third Day, June 7, 1900—Morning Session.

Dr. Leopold F. W. Haas, New York, read a paper entitled **Diabetes Mellitus in Children.** He reported two cases of this comparatively rare disease, in children aged five and nine years respectively. He prefaced the report of these cases by a brief resume of the etiology and pathogenesis of diabetes, in which he emphasized the part played by heredity and tuberculosis in the causation of this condition. The two cases occurred in children who were members of the same family. The father and the grandfather and an aunt on the paternal side, as well as the maternal grandmother, had tuberculosis. No diabetes had occurred in any other member of the family. The first was a combination of peliosis rheumatica and diabetes, and exhibited the symptoms of the rheumatoid condition, the purpuric eruption, etc., together with glycosuria. The former disappeared after a week, and the girl was doing well at last report. The second case occurred in a boy who had sustained severe injuries eighteen months before, but unfortunately the exact nature of this injury could not be determined from the anamnesis, otherwise a clue as to its etiologic significance might have been obtained. After giving the histories of these two patients in detail, the author arrive at the following conclusions:

1. Diabetes occurs more frequently in children than is generally supposed.

2. Urinanalysis is just as important an element in the scientific diagnosis of disease in children as it is in adults. It is to be regretted that the general practitioner but rarely realizes this fact.

3. There is a possible etiologic connection between peliosis rheumatica and diabetes. The pathogenesis of both conditions is so obscure, however, that speculation on this question can only point out a direction for further research.

DISCUSSION.

Dr. HEINRICH STERN, of New York, said that diabetes was certainly rare in children below five years of age. In the reports of the Board of Health of New York for the past ten years he found eleven cases in which the death was reported as due to diabetes. Four of these were below one year. The disease is a little more frequent in children over five years of age and the speaker has collected thirty-one cases in children over nine years. The pathogenesis of diabetes is not as obscure as that of some other diseases. It is a disturbance of development, especially of the brain and central nervous system. In future trephining and local puncture will be the only way to treat diabetes in childhood. The disease has nothing to do with intoxication.

Dr. LOUIS J. LAUTENBACH, of Philadelphia, said that he had heard adenoids mentioned in the clinical histories in several sections of the Association. Adenoids were the expression of some unknown systemic condition. He noted, for instance, that adenoids are present in 40 to 45 per cent. of cases of phlyctenular conjunctivitis. He believes that if we could only know the cause of adenoids it would help us to understand many other diseases. The removal of these growths must always be insisted upon.

Dr. E. ROSENTHAL, of Philidelphia, spoke of two cases of diabetes mellitus in children which he had seen in practice. One of these died when five years old, the other lived to the age of eleven years. The prognosis is invariably bad. In these cases there was no history of tuberculosis in the family. He believes that artificial feeding may have something to do with the occurrence of diabetes in infancy.

Dr. HENRY E. TULEY, of Louisville, Ky., read a paper entitled **Purpura Hemorrhagica or Scorbutus.** He reported a case of a child, aged two years and seven months, that had been fed on breast-milk for about a year and then given a very general diet at the table. The child had frequent attacks of gastroenteritis, but as a rule quickly recovered from these. There was no family history of hemophilia. In December, 1899, she developed a typical attack of scorbutus, presenting all the cardinal symptoms of this malady as detailed by the authorities: spongy, bleeding gums, fusiform swellings at the ankle-joints, hyperesthesia, pain and inability to walk; hemorrhages from the bowel, petechiæ all over the body, especially the trunk and the lower extremities; diarrhea and fever. These symptoms are also those of purpura hemorrhagica. As the child had been fed at the table, this could not be called a case of scurvy, as Crandall and others state that children so fed never get scurvy. Hence we are at sea as to the classification of such cases. According to Strümpell, bleeding of the gums is uncommon in purpura, and hence one cannot call the case one of purpura. From a study of the subject it is the belief of the speaker that purpura simplex, the affection characterized by hemorrhages into the skin, is never an idiopathic disease; that purpura hemorrhagica, the disease in which there are hemorrhages into the mucous membranes and serous cavities, is not an independent condition, but a modified form of scurvy. It may be due, perhaps, to an exclusive diet, or to an ill directed general diet, with consequent development of malnutrition and marasmus as the forerunners of scorbutus.

Dr. Griffith, of Philadelphia, said that he believes and teaches that the diseases in which we find purpuric spots shade into each other. He does not know that they are the same disease. In purpura rheumatica, for example, we may have erythema and urticaria, and purpura rheumatica is not always characterized by a purpuric eruption, hence the name is a misnomer. In Henoch's purpura hemorrhages from the mucous membranes occur, as well as visceral complications. Whether these are connected with scurvy we do not know. Purpura is a word like jaundice, a symptom only, not a disease. Cases of sepsis, marasmus, may be accompanied by purpuric eruption towards the end of the disease. It is true that at present we are at sea about the classification of this group of affections.

Dr. J. L. **Morse**, of Boston, said that we do know that purpura is a symptom and not a disease, and that it is due to changes in the vessels as a result of septic processes or other conditions that change the chemical composition of the blood by the development of poisons. As to the relation between scurvy and purpura, he believes that scurvy may be due to other causes than insufficiency in the food.

Dr. A. C. **Cotton**, of Chicago, said that we should not overlook the fact that sponginess of the gums does not necessarily indicate the presence of scurvy. Purpura is a disturbance of circulation comparable to that which occurs in the vessels when death approaches. The old term necremia may still be used to designate these changes in the vessels.

Dr. J. H. **Byrne**, of New York, spoke of two cases of purpura that he had observed. The first patient was a boy, aged nine or ten years, who had fallen from a horizontal bar; the second, an adult, who was subject to intermittent fever. The blood extravasations in the skin were marked, and there were hemorrhages into the mucous membranes. Malaria as a great blood destroyer may be a factor in purpura.

Dr. **Tuley** in closing the discussion said that the term purpura hemorrhagica should not be used, and the designation scorbutus be used instead. He agreed with Dr. Griffith that purpura was like jaundice, a symptom. Purpura may be due to changes in the blood, not only in the vessels.

Dr. **Julian W. Brandeis**, of New York, presented a paper entitled **The Value of Blood Examinations for Diagnostic Purposes.** He called attention to the importance of microscopic blood examination as a clinical aid in diagnosis, differential diagnosis and prognosis, and then proceeded to illustrate its value in regard to each. Concerning diagnosis he reviewed the principal blood changes by which we recognize chlorosis, secondary anemia, pernicious anemia, leukemia, Hodgkin's disease, *anæmia infantum pseudoleukæmica*, malaria, relapsing fever, etc. Incidently he referred to the fact that the blood of infancy may show nucleated erythrocytes together with a leucocytosis, marked by a lymphocytosis, in the presence of any disease which arrests development, such as rachitis, without necessarily the co-existence of an anemia; and that in the anemias of infancy and childhood the leucocytosis is more extensive, the destruction of red cells greater, and the occurrence of nucleated erythrocytes much more common than in anemias of the same grade in adults. Then he went on to discuss differential diagnosis as facilitated by this method, and, after considering the primary blood diseases as opposed to each other, and affections which simulate them in clinical signs or symptoms, he dwelt on the value of leucocytosis in distinguishing appendicitis from typhoid, biliary or renal colic or floating kidney; pneumonia, septicemia, or meningitis from typhoid; scarlatina from measles; suppurative from tuberculous or non-supperative processes, etc. The particular variety of leucocyte increased is important in some cases, for an eosinophilia points to bronchial as against renal or cardiac asthma, puerperal mania as against puerperal sepsis, etc. Regarding prognosis, the writer stated that the absence of any leucocytosis in any but the mildest cases of pneumonia, diphtheria, appendicitis or septicemia meant a fatal issue. The presence of eosinophilia is a good prognostic sign in scarlatina or scarlatinal nephritis, as is the occurence of large mononuclear or polynuclear leucocytes with perinuclear basophilic granules in phthisis.

S. Weiss, of Vienna, presented a paper which was read by the Secretary, entitled **Pus Reaction, Its Detection by Means of a Simple Method of Blood Examination.**

Ehrlich found that glycogen was present in the blood under certain conditions of inflammation or suppuration, and that such blood gave a brown reaction when treated with iodin. Goldberger and Weiss endeavored to apply this fact to the diagnosis of suppuration in internal organs, etc.; for example a deep-seated localized empyema. The method is simple and rapid, and requires but a single drop of blood. The method of staining is as follows: A drop of blood is taken from the tip of the finger or lobe of the ear, the part selected having been previously carefully cleaned with soap and water, followed by alcohol and 1:2000 of bichloride of mercury solution. The needle used should be sterilized. The drop of blood is received on a cover glass, then another cover-glass pressed upon it to reduce it to a film, and allowed to dry in the air. A drop of Ehrlich's Iodin Gum Solution is then added. The latter consists of Iodin 1, Potassium Iodid 3.0, distilled water 100, gum arabic enough to make syrupy liquid. Healthy blood under this stain shows the following conditions: The red blood corpuscles stain dark yellow, the leucocytes a lighter yellow, with distinct nuclei which are lemon colored shining bodies. The granules of the eosinophile cells present the same appearance, while those of the leucocytes are darker in color. Small brown granules (extracellular glycogen) are also found according to Gabritchevsky. When suppurative processes are present the writer found, in addition to increased amount of extracellular glycogen, that a varying number of leucocytes had assumed a brownish hue of varying intensity from a slightly reddish brown to a dark reddish brown. The same was found in pus corpuscles, and in some cells the stain was homogeneous; in others the granules stained dark brown, while the body remained yellow.

The author reviews the literature of the subject and believes that this method will give a valuable clue to the presence of suppurative processes.

DISCUSSION.

Dr. J. L. Morse, of Boston, said that the attitude of the profession at the present day was such that they really expect too much from blood examinations. Dr. Brandeis's paper was an excellent exposition of the subject, but it applied but little to diseases of children. Thus, for example, he discusses the blood diagnosis of cancer and ulcer of the stomach, local sepsis, etc. The fact is, the blood behaves differently in the diseases of childhood from what we are accustomed to see in adults. Chlorosis only occurs in older children and in adults. Pernicious anemia probably never occurs in children, and he thinks that cases of so-called pernicious anemia in children are nothing but severe secondary anemias. The forms of the corpuscles are not so significant in children as they are in adults, because in childhood there is normally a tendency to revert to the fetal type. Leucocytes are more numerous in children and lymphocytes are more numerous in proportion to the other varieties, so that leucocytosis does not have the significance in children that it has in adults. As to differential diagnosis by means of leucocytosis, he thinks this test helps us only to decide which of two conditions we have to deal with if one of these conditions is accompanied by leucocytosis. He has not seen leucocytosis in serous pleurisies of children, and thinks the explanation of this may be sought in the fact that pleurisies of childhood are so often of tuberculous origin.

Dr. Louis Fischer, of New York, said that he agrees with Dr. Morse as to the care with which we must weigh the evidence of blood examinations, but he believes that such examinations are very useful adjuncts to other diagnostic means in cases in which the clinical symptoms are not perfectly clear. Thus, for instance, in typhoid fever, the Widal reaction and the diazo-reaction help us to decide when we are in doubt. Dr. Weiss does not claim, of course, that one can diagnosticate appendicitis from the presence of the glycogenic reaction in the blood, but if there are symptoms pointing to appendicitis, and we are in doubt, the blood examination will help us to decide the question.

Dr. E. Rosenthal, of Philadelphia, asked Dr. Morse whether, by means of determining the presence or variety of leucocytosis, one could differentiate typhoid fever from other conditions, such as for instance inflammation of the gall-bladder. Dr. Morse, in reply, stated that in typhoid fever, and also in influenza, malaria and measles, there is no leucocytosis unless a complication arises. The speaker does not wish to be understood as belittling the value of blood examinations, but the point he wishes to emphasize is that we must make blood examinations with a definite purpose in mind to determine which of two or three possible diseases we are dealing with and not haphazard.

An Ointment for Fissured Nipples.—According to *Progrès médical* Crinon cites the following from Vinay:

℞	Aristol	part j.
	Vaselin	parts xx.

M. To be applied after each act of suckling.—*N. Y. Med. Jour.*

PRACTICAL NOTES

The Mortality from Measles.—The Secretary of the Connecticut Board of Health, in the *Monthly Bulletin* of the Board for February, emphasizes the prevalence of measles as a disease, its frequent sequelæ and its important effect upon mortality records in the following judicious paragraphs:

"There is an increasing prevalence of the malady since the year began. It is a serious error and very widespread in the public mind that measles is a comparatively trivial disorder and that the precautions to prevent its spread are unimportant and not worth the trouble. To show the fallacy of this belief and how dangerous it is to act upon it, it is only necessary to refer to the published reports of vital statistics.

"In the last four years there were only 239 deaths from scarlet fever in Connecticut, while there were 427 deaths from measles. Yet both diseases have been prevalent through the State all that time.

"In the report of the Registrar-General of England for the decade 1888 to 1897 the deaths from scarlet fever numbered 57,226, while those from measles were 128,043, more than double the mortality of scarlet fever.

"The report of the Registrar-General of Ireland for the same period is similar—scarlet fever 5,272, measles 8,842. It is true the direct mortality from measles is not large in proportion to the whole number ill with it, but it has been observed for generations that following an epidemic of measles there is always an increased mortality from pneumonia, bronchitis and consumption. Is it a trivial disease that destroys more lives in ten consecutive years throughout both England and Ireland than the united victims of scarlet fever and diphtheria? Deaths from measles in those countries were 136,885. Deaths from scarlet fever and diphtheria together in England and Ireland during the same ten years were 135,681.

"From these facts it must be conceded that measles is not a trivial malady, but that its importance as a factor in public health ranks well up among the most dangerous diseases.

"Is it a preventable disease? Yes. Inasmuch as its continued prevalence depends upon contagion it is preventable. But it is not so easily prevented as some other diseases. Its prevention and restriction depend much upon the ready and willing co-operation of parents and physicians."—*Boston Med. and Surg. Jour.*, March 22, 1900.

ABSTRACTS

AUTOINTOXICATION AS A CAUSE OF CYCLIC VOMITING IN CHILDREN.

In a paper read by Dr. Alex. Marcy, Jr., of Riverton, N. J., before the Pediatric Society of Philadelphia, at a recent meeting, he called attention to the fact that this disease was very rare and not well understood. Very little literature existed on this subject, Holt, Rotch, and Pepper being the only authorities that mention it in their text-books. He presented the history of three cases that had come under his observation, one of them mild, the others very severe cases. The two severe cases, after having a number of attacks, died during the occurrence of one.

In both there was an acute nephritis, which came on soon after the attack began. The first case died as a result of the profound toxemia, the second one from exhaustion.

A post-mortem examination of the second fatal case showed extensive and well marked catarrhal inflammation of the stomach and intestinal tract, with fatty degeneration of the liver and inflammation of kidneys. After outlining a typical attack of cyclic vomiting, as observed a number of times in each of these cases, he concluded by stating his own belief, after a very careful study of these cases, to be that they are examples of autointoxication, due to ptomaine poisoning; that this ptomaine is probably found in the intestinal canal, and is absorbed in the blood, producing a toxemia. The vomiting is primarily produced by the effect of this poison on the nerve centers. The poison is eliminated by the mucous membranes and the skin. The catarrhal inflammation of the stomach, bowels and kidneys is a secondary process, and is not present excepting in the severe type of cases.

In support of these views, he called attention to following facts:

First. A study of the urine before an attack shows that it is always increased in quantity, of high specific gravity, very acid, and containing large amounts of indican. The uric acid, while not in excess, is much below normal.

During the first few hours of the disease there is but little change in this respect, but gradually the quantity of the urine diminishes, the indican disappears, and acetone in large quantities is found. Acetone is also given off by the breath, and causes a peculiar odor, which is almost pathognomonic. The post-mortem appearances of the mucous membrane of the stomach, duodenum, jejunum, ileum and colon, together with the elevated temperature of the third or fourth day, the pain and soreness to the touch, all point plainly to acute catarrhal inflammation. Treatment he considers practically useless. Hypodermic injections of morphia and atropia produce sleep and relieve pain; they also control the vomiting to a certain extent.

is every reason to anxiously adopt preventive means which will stay its ravages. Indeed, carrying my reasoning into action, I frequently succeeded in confining the disease to a single member of large families, and the fact that in an orphan asylum of over 800 children the disease was limited to but 49 speaks well for the efficiency of such prophylaxis."

As antipyretics he used sodium salicylate, salol, and quinine sulphate but he has obtained the best results with sodium benzoate. Occasionally it may be necessary to administer some acetanilid, and when the pain is very severe also a little codeine.

Whenever rheumatoid pains predominate he combines the just-mentioned drugs with salol, which acts at the same time as an intestinal antiseptic. Thus, when he is called upon to treat a case of the grippe of moderate severity he orders:

℞ Sodium benzoate }
Salol .... } of each............. 1½ grain
Acetanilid....... }
Caffeine .... ¼ grain

Mix. Make one powder. Sig.—One powder every three hours to a child six years old, or if the pain is severe and the child is kept awake, add 1-12 grain of codeine sulphate to each powder.

Where children refuse to take powders he prescribes the following mixture, again adding codeine if necessary:

℞ Sodii benzoat. }
Antipyrin.... } āā .... ʒss
Liquor ammon. anisat. }
Syr. scillæ comp....... } āā............... ʒij
Syr. altheæ............... .... f℥jss
Aquæ anisi........................ q.s. ad f℥ij

M. Sig.—One drachm every three hours to a child six years old.

In addition, he orders inhalations of the compound tincture of benzoin as an expectorant and antispasmodic. Occasionally hot flaxseed poultices and expectorants are indicated. Small doses of calomel and ingluvin may be given for the digestive disturbances, chloral for the convulsions, and strychnine for the prostration. If the cough is protracted he orders small doses of creosote with glycerin, alcohol, and a pleasant adjuvant.

FOREIGN PEDIATRIC JOURNALS.

Abstracts of all Original Articles Appearing in Foreign Journals Devoted to Pediatrics

PEDIATRIA, June, 1900.

1. **Abdominal Massage in Ascites of Children, Particularly in the Ascitic Form of Tuberculous Peritonitis.** By DURANDO DURANTE.—While there is no doubt that marked success follows laparotomy in tuberculous peritonitis, it is to be borne in mind that peritonitis often heals spontaneously in children, and therefore palliative measures will be sufficient in certain cases, if applied early enough. The writer studied the effects of massage of the abdomen upon the tuberculous process in the peritoneum. In addition to the general beneficent effect of massage upon the nutrition, this mode of treatment has a specific local action. It facilitates the absorption of the effusion; it stimulates the activity of the bowels, and lessens the congestion and dilatation, thus indirectly removing a part of the pressure from the peritoneal surface. In addition, massage favors the abdominal circulation and thus also helps the process of absorption. The writer reports three cases in which he used abdominal massage with good results. These three cases represent three degrees of severity of the peritoneal inflammation. In all of them the fluid was finally absorbed completely; but massage will not prove equally useful in all cases of peritoneal effusion. In the first case there was a slow, latent form of tuberculosis; there was no doubt as to the diagnosis, however, for the tuberculin test gave a positive result. The child was seen several years after she had been discharged cured, and she was enjoying good health. In the second case there was a more marked tuberculous process in the peritoneum, together with a general scrofulous condition. The effusion disappeared under massage, but the writer cannot definitely say that the child was cured, for he has not been able to follow the case for any length of time. In the third case the process was still further advanced, and there were grave general symptoms. The writer believes that in this last case the absorption of the fluid was not due so much to the massage as to a process of dessication of the whole body that took place as a result of the tuberculous infection. In tuberculous cases massage may be regarded as a valuable adjunct to other means of treatment, and should be tried in cases in which palliative methods are indicated.

2. **Concerning Prophylactic Injections in Diphtheria.** By G. B. VIOLI. —The author gives his experience with antitoxin in Constantinople. The sanitary conditions in Turkey, as is well known, are not the best by any means, and this report thus has a particular significance as indicating the possibilities of antitoxin. The first preventive inoculations of antidiphtheritic serum were administered in 1896 with serum supplied by the

Bacteriologic Institute, founded by the Sultan. Professor Nicolle, a pupil of Pasteur, is at the head of this institute. Since that time to the end of 1899 the writer has given inoculations of the serum to 75 children that did not present any symptoms of diphtheria. The doses ranged from 4 to 10 cubic centimeters, according to the age of the patients. During this period six of the children who had received preventive inoculations were attacked by diphtheria on the fourth to the thirtieth day after the inoculation. The writer gives the clinical histories of these six cases, and also notes a painful local reaction, which was accompanied by redness, swelling, and induration, with or without fever. It took place in some children after the inoculation, and disappeared on application of boric acid compresses. He observed this complication in 37 out of the total of 75 cases. These children were between three months and ten years of age; the doses were from 3 to 10 cc.; the reaction appeared eight to ten hours after the inoculation and lasted from twenty-four to forty-eight hours. The serum was in good condition; the injections were given under all aseptic precautions. The swellings may be said to be simple accumulations of leucocytes, due to a special predisposition in the individuals. In four children urticaria appeared four to fifteen days after the inoculation. In one case there were the local reaction, the urticaria, and swellings of the joints. In conclusion, the author calls attention to the fact that preventive inoculations in diphtheria are not perfectly harmless in some cases. If employed alone they are not a safe preventive of diphtheria, but in conjunction with isolation, disinfection, and other sanitary precautions, they are very useful. These inoculations must not be used indiscriminately, but only in cases where the child is known to have been exposed to the infection, and especially when no other preventive methods can be employed. If they get the disease, then, they will have had the advantage of having received the serum early.

3. **Case of Naso-Pharyngeal Diphtheria; Recovery.** By PASQUALE FUSCO.—The patient was a child aged 2 years and 7 months. The disease took a very severe form, with pseudo-membranes all over the throat and in the nose. The child was given 15,000 units of antitoxin of Mulford's make within seven days. The writer was encouraged in this heroic method by the example of a case that was reported in a small town in New Jersey in which 30,000 units were given, and the child finally recovered. In the writer's case convalescence set in on the seventh day after the first injection, and the patient got well. In conclusion, he draws the following deduction from this case: Antitoxin is the only infallible remedy against diphtheria and croup, provided it is given in such doses and at such intervals as the gravity of the case demands.

4. **Phlegmon of the Neck Followed by Gangrene in a Newly-born Child; Recovery.** By PIETRO VALENZA.—The patient was an infant aged 10 days. On the seventh day the nurse noticed a swelling on the right side of the neck, elliptic in shape, and 4 cm. in length, and also a diffuse redness over the antero-lateral aspect of the neck. The swelling spread over the entire neck of the infant on the third day after it was noticed. There

was difficulty in respiration, inability to nurse, and the skin was bluish along the fold of the neck. There was no fever. On the following day the swelling burst at the point where it had started and some sanguinolent fluid escaped, the volume of the swelling thus becoming considerably reduced. At the site of the rupture the tissues were sloughing. In a few hours the destructive process in the skin spread, causing a loss of substance along the fold of the neck. The skin healed in a few days under antiseptic and stimulating treatment.

ANNALES DE MÉDECINE ET CHIRURGIE INFANTILES, JUNE 15, 1900.

1. **Remarks Concerning the Value of the Weight-Curve in Nurslings.**—By P. BUDIN. The author studies the significance of weight charts in infants, especially the sudden increase in weight during the days that immediately precede death. His conclusions are as follows: A regularly ascending weight-curve is of great value as indicating a condition of general health, but this value is only relative, not absolute. Syphilitic infants who have normal weight-curves, for example, may die suddenly and unexpectly. In grave febrile affections the weight-curve sometimes may be ascending. These infants may recover, or they may succumb to the disease. In some cases in sick children a sudden, at times considerable, rise of the weight-curve may be observed. This rise lasts from one to three days and the infants die. The writer has seen an increase of 150 and even 250 grams in 24 hours; of 185 grams in two days, of 230 and 325 grams in three days.

At times local or general edema appeared in these children; at times they passed very little urine. The quantities of milk that these infants received never exceeded the normal amount.

This marked and sudden increase of the weight-curve in sick children is by no means a favorable sign; on the contrary, appears to point to a fatal prognosis.

2. **Hippocrates Regarded as a Pediatrist.**—By J. V. TROITZKY (continued). The writer gives in parallel columns (1) The aphorisms of Hippocrates that relate to children, (2) The views on the subject of each aphorism held at the beginning of the nineteenth century, and (3) The views held at the threshold of the twentieth century. Under each quotation is a reference to the paragraph where the aphorism is to be found, and in the second and third columns the opinions of the leading pediatric authorities are given with references to the works in which they appear.

3. **Hygiene of the School.**—By JULES DELOBEL (continued). The writer continues his essay on physical education, and considers especially the subject of gymnastic games, military drill and over-exertion. The last topic is of interest to the practitioner. Over-exertion is rarely or never seen in the primary school, says Delobel. The chief causes of physical exhaustion in school-athletics are the sports that are indulged in

in the higher schools and colleges. The abuse of these sports is the more dangerous, in view of the fact that a growing child is predisposed to certain morbid conditions by fatigue, due to exercise without the observance of the proportion of exertion to age. There may be a rise of temperature that is said to be due to over-exertion.

Certain circulatory troubles also may be caused by physical strain; thus palpitation of the heart, epistaxis, vertigo, headaches. In other cases there may be respiratory affections, especially frequent attacks of bronchitis, or gastro-enteric disturbances such as dilatation of the stomach, dyspepsia, appendicitis. In joint affections and osteomyelitis over-exertion at times ranks as a predisposing factor. The nervous system is also influenced by over-exertion, as witnessed by the occurrence of *tics*, chorea, and irritability of temper. Finally, certain special accidents may occur at puberty in the school-boy or school-girl as a result of physical strain.

ANNALES DE MÉDECINE ET CHIRURGIE INFANTILES, July 1, 1900.

Notice of a Collective Investigation Concerning the Prophylaxis of Diphtheria. By E. PERIER.—This notice is issued at the suggestion of Professor Jablockow, of the St. Sophia Hospital in Moscow. The following is the list of questions to be answered by those who take part in the investigation:

1. What bacteriologic method do you employ in order to obtain a positive diagnosis of diphtheria?

2. Do you consider the bacillus of pseudodiphtheria a special, distinct species or only an attenuated form of the true diphtheria bacillus?

3. What importance do you attribute to the finding of Klebs-Loeffler bacilli in the mouths of healthy individuals?

4. Upon what do you base the determination of the period of isolation of diphtheritic patients?

5. Do you favor the establishment of special institutions for the reception of convalescent diphtheria patients because the bacilli of diphtheria are found in the throat for a long time after the disappearance of the clinical symptoms?

6. Do you consider the isolation necessary of healthy individuals (in the family or in the school) in whose throats the bacilli of diphtheria are found?

7. What special prophylactic measures do you prefer to adopt during epidemics of diphtheria in families, schools, hospitals, etc.?

The collaborators are not limited to these seven questions, but the editor will be grateful for any other information that may be sent to him on the subject.

PEDIATRICS

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VOL. X. OCTOBER 1st, 1900. No. 7

ORIGINAL ARTICLES

THE TREATMENT OF SCARLATINAL NEPHRITIS.*

By ROBERT COLEMAN KEMP, M.D.,
New York.

THERE is neither adequate time, nor does it lie within the province of our paper to treat the subject, scarlatinal nephritis, exhaustively, but it is our purpose to endeavor to place the matter before you in such form that it may prove to be of practical value to the general practitioner of medicine. For thorough comprehension of our topic a brief description must be given of the pathology of scarlatinal nephritis, and, of necessity, the symptoms which result from this condition, in order that intelligent treatment may be applied.

Pathology.

Scarlatinal nephritis is believed by our authorities to be primarily due to the "specific poison of scarlatina," the pathological changes in the kidneys that so result following several types in character and varying in their degree of severity. Age, individual susceptibility, and other factors have an influence in its production. To quote Councilman, "as the result of infection depending on individual predisposition, now one part, at another time another part, becomes affected. In the majority of cases we have produced glomerulo-nephritis, then catarrhal nephritis (parenchymatous nephritis); sometimes interstitial processes predominate, at other times hemorrhagic conditions, or even acute suppuration. The essential changes are those of inflammation and degeneration, at no time confined exclusively to either parenchymatous or interstitial tissues, to glomeruli, or uriniferous tubules; yet, upon the whole, it must be conceded that in the majority of instances the glomeruli are affected; if to this there be added 'certain clinical characteristics,' we may, by joining pathologico-anatomical investigations with clinical observations, succeed in establishing an 'entity,' which may be called scarlatinal nephritis."

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*Read before the New York Academy of Medicine, April, 1900.

There are certain characteristics, especially the frequency of anasarca, the inception and course of the disease, its favorable prognosis in the majority of instances, that permit the clinician to establish this form as one "*per se.*" There is also no other disease that has so frequent an accompaniment of nephritis as scarlatina. It is rational to conclude that something which acts as the cause of scarlatina eventually acts upon the kidneys.

Some hold the view, however, that as this form of nephritis occurs about the period of desquamation, "catching cold" is the chief factor; that the condition is brought about by the patient "leaving bed" at too early a period, contrary to the advice of the physician, with resulting "interference with desquamation," thus placing upon the kidneys additional work in elimination of the toxins. In other words, the functions of the skin are interfered with, inflammation of the kidneys results. Similar conditions apply to measles and the other exanthemata, and yet nephritis occurs most frequently with scarlatina. Their theory would seem to be rather "selective." We will cheerfully acknowledge that "catching cold" may be a factor, or that any cause, "known or unknown," which interferes with desquamation, may cause disturbance of the renal functions by placing on the kidneys all the work of elimination of the toxins. This corresponds in point of time also with the appearance of the scarlatinal nephritis. These gentlemen state that the nephritis of scarlatina is due to "catching cold," to interference with desquamation, and hence with skin functions, the work of elimination of the toxins of scarlatina being entirely placed upon the kidneys, but that the nephritis is not due to the specific poison of scarlet fever; in the same breath, that scarlatinal nephritis follows a peculiar type (glomerulonephritis), occurs at a specific period of the disease, has clinical symptoms peculiar to itself—as, for example, anasarca, and that nephritis occurs more frequently with scarlatina than with any other of the exanthemata; therefore why waste time and quibble further over the question. Careful analysis of their statements, just noted, "condemn them from thir own mouths" and logical deduction with clinical observation admit of no other conclusion but that there is a peculiar type of nephritis complicating scarlatina and due to the specific poison.

Congestion of the Kidneys, Albuminuria, Other Forms of Nephritis.

On the other hand, albuminuria, or even nephritis, are produced by other toxins and bacteria in scarlatina; a case of pure scarlatinal nephritis does not exist any more than an absolutely uncomplicated case of parenchymatous or interstitial nephritis. This fact we must remember, and also that though it usually develops from the second to the fourth week, as a rule the end of the third week or during the fourth week, yet it may occur earlier or even considerably later in the disease.

1. Acute Congestion of the Kidneys.

There may be a sudden acute congestion of the kidneys, such as can occur with any infectious disease. This may be temporary, the condition passing off in a few days; or it may exist as the first stage of an acute nephritis. Acute suppression of urine and death within a short period may occur as a result before the inflammatory stage sets in.

Acute congestion might, on the other hand, be the first stage of a *true* scarlatinal nephritis.

We must also note that acute suppression of urine and death as a result has been reported after exposure to scarlatina and before the appearance of the eruption (death from suppressed scarlatina due to uremia.)

2. Albuminuria; 3. Other Forms of Nephritis.

Dr. Emmet Holt states that albuminuria accompanies nearly all the severe cases of scarlet fever, and that in many it is the ordinary febrile albuminuria, due to acute degeneration of the kidneys; that in those with severe throat complications and in nearly all septic cases there is an acute inflammation of the kidneys, usually of the variety described by Dr. Francis Delafield as acute exudative nephritis. This occurs at the heighth of the febrile process and is rarely accompanied by dropsy, but albumin, casts, and even blood may be found in the urine.

In this connection we have noted that in certain cases of scarlatina, complicated by a true diphtheria, the nephritis has been rapidly improved after the administration of antitoxin, an illustration evidently that the specific toxin of the diphtheria was the exciting cause.

Dr. Holt's View of Scarlatinal Nephritis.

"The characteristic renal complication," which is generally designated, according to Dr. Holt, as post-scarlatinal nephritis—"is a diffuse nephritis which, in most cases, develops during the third week of the disease. It is accompanied by general dropsy, the urine is scanty and not infrequently suppressed, and it contains a large amount of albumen and casts of all varieties in considerable number. It may cause death by the occurrence of acute uremia or it may be followed by permanent damage to the kidneys."

We believe, however, that under all conditions careful observation of the urine is of great importance, and that it has unfortunately been our tendency to look upon slight abnormalities in the urine as of no great significance, and suddenly awake to the fact that a serious condition exists. Excessive caution is the safer policy in our treatment.

Febrile albuminuria due to acute degeneration of the kidneys (Dr. Delafield's classification) often occurs with scarlatina from the second to the sixth day, and may last from three to five days. In many instances it may disappear of its own accord. Forchheimer states that sometimes a genuine nephritis develops after it, but that in his own experience there has always been a period, varying in duration, when the urine has appeared perfectly normal before actual scarlatinal nephritis has developed. In the condition of febrile albuminuria the urine contains mucus and cylindroids, rarely epithelial, hyaline, or bloody casts.

The finding of peptone, propeptone, and, possibly, albumoses in the urine Forchheimer believes of no value as an aid to diagnosis, as the results secured by various observers are inconstant and often diametrically opposed. He also believes the diazo reaction without value as far as scarlatina is concerned.

Test for Urine; Test for Albumin and Urates.

("Note that an increase of urates associated with a rise of temperature occurring from the second to the fourth week, especially the latter, are indications of commencing scarlatinal nephritis").

Fill the test-tube three-fourths full of urine and then boil the top layer without heating the urine below this. Comparison is thus afforded between the urine that has been boiled and the urine that is cool. To exclude error from the appearance of phosphates, pour chemically pure nitric acid under the urine; the result will be that where the nitric acid and urine meet a white ring, produced by the coagulated albumin, is formed. The advantage of this test is that it gives not only an insight into the quantity of albumin, but at the same time an idea of the presence of urates, and by comparing with previous results, even of the quantity. These urates form a cone some distance above the junction of the acid with the urine, the base of the cone being deeper in color and the shading becoming gradually less marked as we approach the top. All the clinical results to be referred to have one or both of these tests as their basis.

In fact, with an increase of temperature and an increase in the quantity of urates, when both occur from the second to the fourth week in scarlatina, we are justified in prophesying a true scarlatinal nephritis. This is an indication for immediate and active treatment.

Premonitory Stage of Scarlatinal Nephritis as Indicated by the Urine.

1. The first symptom often noted in the urine in what we may call the premonitory stage is, as a rule, a fall in specific gravity. There are no casts, blood, or albumin, and, as a rule, there is no temperature. Anasarca, as a rule, does not appear,

though occasionally it may do so. This symptom was first called to my attention by your president, Dr. Wm. H. Thomson, and he has observed it in many cases without polyuria and without albuminuria, yet in some with commencing anasarca associated with it.

Other observers speak only of a fall in specific gravity as a primary symptom and as invariably associated with polyuria, and more or less frequent micturition and irritability of the bladder.

This stage occurs before the appearance of albumin, as a rule.

The specific gravity of the urine should, therefore, be accurately taken at least twice a day from the middle of second week of the scarlatina, and the daily quantity of the urine measured.

Active treatment should be begun the instant a fall in specific gravity is observed, as this signifies a commencement of engorgement of the renal vessels.

2. The next symptom that we observe following the fall in specific gravity is a sudden rise of specific gravity, in fact it becomes abnormally high.

The urine is diminished in quantity (oliguria) and is high colored.

Frequently these are the first symptoms noted by the physician—diminished quantity, high specific gravity, and high color, no preliminary fall of specific gravity occurring.

As a rule there is as yet no albumin, usually no anasarca, and no temperature nor exacerbation of temperature, which already exists from other complications.

These signs are especially significant during the second to the fourth week of scarlatina, and also denote an engorgement of the renal vessels (congestion), and are danger signals. Active treatment should be at once instituted in the preliminary stage.

Occasionally there may be a trace of albumin and a slight rise of temperature, or even slight anarasca coincident with the above symptoms.

These symptoms point to an acute scarlatinal nephritis, especially when occurring at the period noted.

3. The increase of urates, especially with an accompanying slight rise of temperature, when occurring in the second to the fourth week of scarlatina, especially in the third and fourth weeks, though without albumin, is indicative of a commencing scarlatinal nephritis, as previously noted.

4. As a rule a period of perfectly normal urine intermits before the development of the scarlatinal nephritis. This is the experience of Forchheimer.

Further Development of Symptoms.

Albumin, then, appears contemporaneously,or before this there is a rise of temperature denoting an active inflammatory process and casts, and red and white cells are found in the urine.

Rapid and Marked Anasarca Develops.

There may be ascites, pulmonary edema, pulmonary congestion, pneumonia, pleurisy with effusion,pericardial effusion, convulsions, coma, suppression of urine, or, rarely, edema of the brain or edema of the glottis.

Anasarca is typical of the disease; dropsy is, as a rule, first seen on the face beneath the eyes, then on the feet, legs, scrotum, etc.

Pain in the back, to which most authors allude as a prominent symptom, does not always occur.

Occasionally nephritis may occur without producing the evidences noted.

Mixed cases, according to Forchheimer, may occur early or late in the disease, as heretofore noted, the hemorrhagic form often being fatal in the first seventy-two hours. Hematuria may not always even be present in this form and may be present in the non-hemorrhagic form, hence there is often great variety in individual cases.

Uremia.

"Usually prodromic symptoms develop as disturbances of the gastro-intestinal tract and nervous system with fever and increased pulse rate and anuria, or when the urine is passed frequently it is small in quantity and of low specific gravity.

"As to the gastro-intestinal tract, vomiting appears first in frequency and diarrhea next; headache also occurs."

Nervous Symptoms.

The next symptom to cause anxiety is the beginning of convulsive movements. They may commence as twitching of the eyelids and corners of the mouth, or may be confined to groups of muscles, unilateral or bilateral, or may become general.

Sopor or stupor, to a greater or less degree, are associated with these symptoms, and finally coma. Depending upon their degree of severity, the patient is in a stupor or coma following the general convulsions. Sudden coma may develop without general convulsions preceding it. Amaurosis may occur, or the patient may notice lessening of visual power. On the other hand a sudden fulminating attack of uremia may occur, with immediate coma or convulsions followed by coma, with rapid death from suppression of urine, pulmonary edema, or edema or hemorrhage into the brain.

There may be parametritis.

There may be enlargement (dilatation) of the left side of the heart only, or this may first occur, followed by enlargement of the right side of the organ, an acute general dilatation of the heart, and a rapid enlargement of the liver. This last signifies a grave prognosis.

Pericardial effusion may occur at any time.

Endocarditis is rare, but such a condition occurring as a complication of nephritis would especially suggest a septic condition (streptococcus infection). This would be liable to occur in cases in which severe angina was a complication. The temperature would also probably assume a septic course. Rheumatism might be a cause of the endocarditis.

Treatment of Scarlatinal Nephritis.

In discussing the treatment of this condition we have elected to follow the somewhat unusual course of first calling to your attention certain therapeutic agents which are of considerable value and of which little mention has been made in our text-books. In the application of some of them for specific purposes and by special methods we believe they have received but slight recognition and some of them none at all.

Nitrate of Amyl for Uremic Convulsions.

The first remedy that we have found useful is nitrate of amyl as an antispasmodic in acute renal convulsions.

We refer to this method, as we have had success in its employment. It is, as usual, to be given by inhalation.

We have seen the convulsions checked almost instantaneously by its use, and believe it worthy of further trial, as the injection of morphine might often thus be avoided.

Oxygen.

In oxygen we believe we possess an agent which has a far wider sphere of usefulness than is generally accredited to it. Unfortunately our tendency has been to employ it at a late period, and often to no purpose. In fact, to the patient's family the appearance of the oxygen tank is indicative of the soon to be expected demise of the victim. The use of oxygen has been confined by most of us to pulmonary disease or to conditions in which the respiratory functions are chiefly affected. A few also advocate it in anemia.

There are two propositions, therefore, to which we desire to call your special attention, as regards the employment of oxygen in scarlatinal nephritis.

First.—In pulmonary complications due to nephritis oxygen should be employed from the incipiency of the trouble.

Second.—Oxygen is *per se* a valuable respiratory and cardiac stimulant. The general circulation is improved and through the oxygenation of the red cells all the functions of the economy. Oxygen, therefore, is of assistance in restoring the secretory functions to their normal condition; in other words, it is an adjuvant in the toxemia of scarlatina to aid elimination of the toxins in the blood through the kidneys, skin, etc. It should prove of value, therefore, in many cases in which no pulmonary complications exist.

Oxygen in Scarlatinal Nephritis.

As regards the use of oxygen in pulmonary conditions due to nephritis, we may cite pulmonary edema, pulmonary congestion, or pleurisy with effusion, due to oliguria, as sufficient examples.

The early use of this agent we believe to be the key-note of success, for oxygen will dilate the bronchioles, improve the respiratory functions, and also the pulmonary and general circulation. Such results must necessarily diminish the chances of further extension of the morbid processes and aid the absorption of those products which already are present. This improvement in the pulmonary and general circulation, and hence in absorption by the lymphatics by the use of oxygen, will aid also in the absorption of pleuritic effusion. Under any conditions we can see no advantage in delaying until there is little pulmonary tissue to ærate.

As regards our second proposition, the value of oxygen as an aid to elimination of toxins in scarlatinal nephritis, we desire to call to your attention the following.

Scarlatinal nephritis is believed by most authorities to be a result of the specific poison of the disease. The hemaglobin of blood is diminished. Elimination of the toxins of scarlatina and of the uremic poisons (if they may so be called) resulting from the deficient kidney action, should be our object.

Oxygen is a circulatory and respiratory stimulant and improves the condition of the red cells, as heretofore stated. Improvement of the secretory functions must necessarily result.

We therefore believe oxygen to be of value in oliguria with a tendency to suppression, in uremic coma or convulsions, or, in fact, whenever there are evidences of toxemia dependent upon the kidneys.

(*To be continued.*)

An Ointment for Pemphigus in Infants.—The *Riforma Medica* for July 18th gives the following formula:

℞ Zinc oxide, } each .... 1 part;
Salicylic acid, }
Lanolin .... 40 parts

M: —*New York Med. Jour.*

THE CARE OF THE HIGHER GRADES OF FEEBLE-MINDED.*

By A. W. Wilmarth, M.D.,

Superintendent of the Wisconsin Home for Feeble-Minded.

THE diagnosis in the higher grades of imbecility is not always quickly or easily made. An idiot, with his dull expression, slow speech, or, possibly, entire inability to speak, imperfect muscular control, and lack of reasoning power, constitutes an easy problem. The higher-grade imbecile may be equally incapable of proper self-care. He may speak on certain questions fluently, may be skillful in handicraft, but, at the same time, be as fit a subject for the care of the public as is the idiot. I might say more so; for while his capacity for self-care is greater, his capacity for public harm and his chance of danger and suffering is also greater. It is about as difficult to formulate a comprehensive definition of imbecility as it is to accurately define insanity. It has been defined as mental deficiency depending upon imperfect development or disease of the nervous system occurring before, at or after birth, previous to the evolution of the mental faculties. This does not completely cover the case, as in some children the mental faculties are partly evolved and then partly or wholly lost, owing to juvenile disease, constituting, in this case, a juvenile dementia. At the same time this definition is sufficiently accurate for all practical purposes. The lack of development, however, of some special faculties may not constitute feeble-mindedness in the sense in which this term is generally used. Very many people never develop any idea of music, and all music remains meaningless to them throughout the term of their natural life. Others find mathematics an unobtainable science and cannot with any degree of effort become efficient in that branch. Yet such people may be above average intelligence and are in no way handicapped in their life-work by this deficiency. It is only when such faculties are impaired or wanting as are necessary to carry on ordinary social relations, that the defect becomes disagreeably noticeable. We might then include as feeble-minded those in whom such faculties are defective or wanting as are necessary to carry on ordinary social relations and prevent the victim of the infirmity from ever acquiring an average social standing or degree of usefulness in the community at large. As we meet this class of higher-grade imbeciles in the institution or in the community at large we will find that the origin of their infirmity differs quite materially. We will find many of them members of degenerate families where a weak brain is their birthright. We find occasionally victims of traumatism, where the injury received has permanently impaired the function of some important portion of the brain, thus preventing its consecutive action as a mental organ. The epileptic is also found in this group, whose spasms have not been frequent enough or sufficiently long-continued to produce a marked degree of dementia. We find also the victim of infantile disease, where the infirmity seems to date from a single severe convulsion during teething, probably producing local hemorrhage and small but permanent injury to the brain tissue. We will find many cases resulting from the exanthematous diseases, where a portion of the violence of the special poison has been exerted on the most delicate of human organs. Localized meningitis also numbers among its victims a good many in this class. Dr. Knight of Connecticut many years ago pointed out the fact that many cases of uneven mental development, where certain faculties seemed unusually developed, either actually or possibly by contrast, were due to small localized attacks of meningeal inflammation. Last of all we find that, fortunately, infrequent class of defectives or degenerates known as moral imbeciles, whose moral nature resists growth even under most favorable environment and constitutes them a permanently dangerous element in whatever community they are placed. I know that the existence of this class, as so designated, has been denied most emphatically by some writers. With the passage of years, however, it is becoming better known and its true status acknowledged outside of the institution. A temporary residence in the society of one or two such cases would be all that would be needed to convert the most skeptical.

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* Read before the Section for Diseases of Children at the meeting of the American Medical Association, Atlantic City, June 1, 1900.

The question is often brought to us to decide whether a child may be backward or permanently defective, a question which is not always possible of solution but may be *generally* decided with a reasonable amount of accuracy. If a child makes steady progress, however slow it may be, we may ascribe it to slowness of comprehension. If, however, such a child seems to easily reach its limit and we find that further progress is impossible in branches where we should expect other results, it is usually safe to infer that the child is permanently defective. Commencing from infancy the method of study may be detailed about as follows. One test is the time at which the child's power of concentrated attention was first aroused. The normal child at a very early age begins to notice a light or other attractive object. If the period before the child exhibits this ability for observation is unduly prolonged suspicion that the child is defective either in vision or in mental acuteness is perfectly justifiable. The delay in development of muscular strength, indicated by an unusual delay in sitting alone or beginning to walk, should call for a thorough examination for the reason. Speech may be delayed for a considerable period and then rapidly develop. If, however, at the age of four years speech should still be wanting, we have a right to suspect a fault in the nervous mechanism of speech, or a low mental condition that furnishes little material for expression. If this serious defect or *entire want* of the power of speech is prolonged to the age of six or seven years our suspicion becomes a certainty. Fernald says: "It is safe to assume that the child of six years, without deafness or defect of the vocal organs, who cannot talk, is actually feeble-minded." A little later in life the need of correct diagnosis becomes more imperative, because by seven or eight years of age, what might be called the inquisitive age of children, has about passed its acute stage. I mean when their insatiable curiosity and their frantic zeal in asking questions, relevant and irrelevant, answerable and unanswerable, merges into the period when the normal child begins to analyze the great quantity of things he has memorized and to combine them in his daily thought. Not much later than this age, or better still, a little earlier than this, the system of bringing such things before him as would be most useful for him to know, or, in other words, systematic teaching should begin; and when the child does not readily respond the question as to whether he is only backward or inherently feeble-minded must be decided. The question of judgment or the lack of mental or moral control is not of much value at this age, for the child has not reached the time for its normal evolution. We must judge by his mental progress largely. As before stated, if he makes continual progress, however slow, in studies suitable to his age, he may be classed as simply backward. If, however, he reaches a point where he makes no further progress in one or more particulars, long before what may be regarded as the normal limit is reached, he should be looked upon as probably imbecile to some degree. Those defects in some special physical functions, such as speech, locomotion, etc., before described, may give us important collateral information. In children who have passed the age of fifteen the diagnosis becomes relatively easy. It is probable that on conversation the mind will be found abnormally narrow on certain lines. The child has not absorbed the vast amount of classified information which the normal youth manages to collect, or if he has memorized a vast amount of mental food, he will be unable to put it to practical use. He may have the knowledge of an adult, but it is with the judgment of a child. He falls naturally into the rear rank of human progress. I can find no better words to describe him than a quotation from an article written by Judge Ashman, of Philadelphia, on "A Medico-Legal Study of Idiocy," in 1887, in which he uses the term idiot to express a feeble-minded person: "Hence an idiot while for all purposes of self-cace he may be absolutely impotent, may be taught to read and write. While the germs of all the human faculties are present, they operate on a minute scale, and when a careful training has educated them to the utmost, we still find that the central and balancing force is wanting and that the idiot is hopelessly deficient in self-knowledge."

Questions not infrequently arise which may involve quite important financial interests or legal responsibilities in case of criminal acts, all of which hang on the mental responsibility of an individual suspected or claimed to be feeble-minded; and it is important that all who may be called as experts in such cases should be prepared to correctly diagnose the condition referred to. In the matter of property interests, some degree of imbecility may not unfit the subject to transact business. I myself have seen cases where mental weakness undoubtedly existed along certain lines, and yet the person in question could drive an exceedingly shrewd bargain. We are liable to run across cases in court where the question of responsibility is the determining point of the whole cause. It is hard to convince the average jury that a certain action may be done through an impulse stronger than the will power of the individual. They are more liable to ascribe it to depravity and punish it as such, and in this matter they are sometimes ably assisted by the attorney for the prosecution. Now there are many things which go to indicate that a healthy brain is essential to a proper moral balance, but none perhaps more striking than the entire failure of moral sense, which is often the first or nearly the first symptom evident in certain forms of mental disturbance due to organic brain disease. There are few physicians who have not witnessed the absolute downfall of moral sense which is liable to occur in the first stages of general paresis. This total failure of moral force in men of previously clean character, and the shameless acts they will freely perpetrate, shocks and alienates their friends until other symptoms intervene to explain the nature of the case. An instance occurred in one of our Eastern States a few years ago, where a much esteemed middle-aged man of high standing in social and political circles raised checks in a way which could only lead to immediate detection. His acquaintances wondered, not only at the crime but at the stupid manner in which it was perpetrated. It was explained not long after, when cerebral paralysis slowly developed. It would appear probable that if the disease of certain regions of the brain can destroy the moral qualities of many years growth, a lack of development of these same regions, either through accidental causes or through inherited weakness acquired from preceding generations who had never cultivated any moral sense might prevent this development. I have dwelt on this point to some length as demonstrating that the lifelong restraint of such unfortunates in communities which furnish a maximum of comfort and usefulness with a minimum of temptation and opportunity for crime, is a very proper step. By such means not only is a community protected from their evil influence, but they themselves are safe from unhappiness, which often awaits the irresponsible as well as the responsible evil-doer under the law, and at the same time the public can be protected from their altogether bad influence.

There are numerous physical diseased conditions which complicate mental deficiency. It is only natural that with a nervous system which performs its mental function so slowly and imperfectly other symptoms of nervous weakness should develop, especially those due to faulty nutrition. These we readily find.

Much of the mental action finds its expression through muscular activity. I have already spoken of the common defects of speech. Speech is apt to be slow; the movements of the fingers and hands are slow and awkward; their gait resembles the walk of an aged person to a greater or less extent. They tire more readily than does an individual of normal muscular strength. A common condition with them is what used to be classed under that somewhat indefinite term "scrofulous." The glands will become swollen very easily from comparatively slight irritative causes. They are subject to sore eyes. Diseases of the skin, such as eczema, which is supposed to be non-contagious, will spread like wildfire through a group of feeble-minded children. I know of two institutions where separate rooms had to be prepared and such cases isolated, and a third institution barely escaped such a condition. They are very susceptible to cold, and will stand a high degree of heat, not only without any apparent discomfort, but with what appears to be actual enjoyment. They readily fall victim to the bacillus of tuberculosis. Exanthematous diseases, to which are ascribed a rather high percentage in our tables of causation of feeble-mindedness, are generally more severe in their effect than in normal children. In an epidemic of measles, which took in a large number of the middle and lower grades of imbecility of which I had the care some years ago, I was struck by the large percentage which developed complicating pneumonia, or meningitis; a complication which would prove as a rule fatal. Epilepsy very frequently complicates imbecility, sometime preceding the development of mental weakness, more often occurring as an after complication. Deformities, sometimes due to paralytic contraction, sometimes not, are common. Of paralysis I will not speak, as that will undoubtedly be more fully spoken of in a following paper of this session.

Their treatment consists of medical and surgical measures, strictly speaking, and of mental and physical training. Parents are generally anxious to learn whether such children can be best cared for in their homes, or in the institution. It is unnecessary to state that they would hardly receive the same individual care in the institution as in the home, but the atmosphere is much more favorable for their development. In the home, as the weakest members of the family, they are usually a subject of extra care and indulgence. Faults are excused and overlooked because of their infirmity. They never under any circumstances enjoy companionship. It is absolutely essential for the development of the child's mind, whether this child be defective or not, that there should be the stimulus of championship and rivalry. If the child is below the average standing of his fellows, he cannot but be conscious of it, and the defect is a constant discouragement. It is not strange that they become irritable and difficult to manage under such conditions. Community life is essential to their most rapid advancement. I am quoting not only my own opinion in this idea, but also that of men who have had a longer and wider experience than my own.

Surgery does little for the imbecile. Some years ago a considerable number of operations of craniectomy were made, confined altogether, or nearly altogether to cases of microcephaly. By removing portions of the skull it was hoped to allow a renewal of the growth of the brain, which was supposed to have been suspended by pressure. With the result of such operations you are doubtless familiar. There were some fatalities, which were perhaps not to be so much regretted in the class of children in which they occurred. There was so little actual benefit which could be ascribed to the operation that I do not think that you will find many surgeons who to-day will advocate the measure. Post mortem examinations do not sustain the theory on which the operation is based. There are, however, sources of peripheral irritation which cannot but be mischievous to a weak nervous system, and such causes should be removed as fast as discovered. Persistent eye strain may be mentioned as one of these. I have seen very decided improvement following the wearing of glasses in such cases; improvement which was almost immediate. Abnormal growths in the nostrils or throat, phimois, deformity of the feet, should be remedied when possible. Operations in all these cases furnish hope for improvement in a class where we are justified in seizing every opportunity for bettering their condition. The orthopedic surgeon may do much for them by adding at least to their comfort and self-helpfulness. As a rule they stand operation well. It is hardly necessary to refer to the importance of absolute asepsis in this class, whose powers of resistance are so feeble. Their notably poor muscular control can only be corrected by a suitable muscular training. The more delicate movements are developed by simple finger exercises; by the braiding of mats, paper folding, sewing, knitting, etc., the fingers becoming more and more highly educated by introducing finer and more complicated patterns of work. For the muscles of the forearm, wrist and arms, dumb-bell exercises and Indian clubs furnish the most available means. Systematic movements of the body and limbs are also required. For the muscles of the lower limbs, marching, jumping and especially the simple exercise of walking the edge of a plank, which requires considerable effort of balancing, are useful. The military drill has been introduced into most of the leading schools, with excellent success. It is difficult to induce even the highest grade imbecile to do much studying. Occasionally we meet one with remarkable memory, which seemingly develops at the expense of the other mental powers, but as a rule they lack the power of concentration of attention. Their thoughts easily wander. Consequently all the exercises I have mentioned are exceedingly useful in overcoming this fault, as they require attention in order to do them well.

There are very few points in regard to their medical treatment that require special mention. They succumb far more readily to disease than normal persons, because their power of resistance is lower. In their treatment, therefore, we have to begin supporting measures early, and simple nutritious food in as large quantities as they can well digest is an important part of every treatment. There is one complication, the most frequent of all which occur, of which I desire to speak somewhat at length, that is epilepsy. The idea has been advanced in several states that epileptics should be separated from the non-epileptic imbecile, and I ask your indulgence while I very briefly quote some of the reasons advanced in a recent work on epilepsy for this separation. I wish to say in advance that I have nothing to oppose to this theory, providing institutions of sufficient size are provided for this class to allow of as good a classification as at present exists in our institutions for the feeble-minded. My excuse for introducing the subject here is the frequency with which feeble-mindedness and epilepsy, or at least convulsive disorder, coexist. So frequently does mental defect or disorder, and the motor disorder exhibited in convulsion, result from the same lesion that Kerlin in his president's address in '92, states that 30 per cent. of the applicants at Elwyn were active epileptics, while 75 per cent. had a history of epileptic tendency. Knight states that epilepsy exists of itself, or as a complication, in over 60 per cent. of the histories of the children received into our institutions for the feeble-minded. I quote two or three reasons for their separation from one of the most recent works on the care of epileptics. "These unfortunates cannot be admitted to the institution" (for the feeble-minded) "for the reason that they are a disturbing element, and would exercise an injurious influence on the inmates, and thus retard their recovery." It is doubtful to me whether the epileptic as a rule is a more disturbing element than the excitable idiot or moral imbecile, and still more doubtful as to whether institutions for the feeble-minded were founded with the idea of the recovery of any large proportion of their inmates. Another reason given for their separation is, "An intelligent epileptic child is sensitive about being with a non-epileptic congenital idiot." So would a non-epileptic high grade imbecile be equally sensitive about such a classification; and I know of no institution for the feeble-minded where such a classification exists. One writer goes so far as to say that "Epileptics should not be associated with mental or nervous cases in the same institution, or even within the same grounds," a rather far reaching statement. The author himself states, "It is coming to be recognized, if it has not already been conceded, that institutions for the feeble-minded do not meet the requirements of epileptics." As I have been many years in institutions where a large number of epileptics were cared for, I cannot refrain from saying a word in defense of the superintendents who have for many years given much anxious thought and severe labor to the care and treatment of this class. I have not seen that the epileptic has exerted a deleterious effect on his non-epileptic companions, nor have I seen a non-epileptic in any way have an evil influence over the epileptic where intelligently classified. As the book which I have quoted quite frequently states that "Where epileptics are classed together their infirmity excites sympathy for each other," an equal sympathy is prevalent in the institution for the feeble-minded with the higher grade children for their epileptic companions. When one of our nearly normal high grade imbeciles has one of his infrequent spasms, the boy who is nearest to him knows as well what to do for him as one of the nurses, and will readily do it. Why should it be emphasized, then, that institutions for the feeble-minded do not meet the requirements of epileptics? Their schools are as good. Their opportunities for manual training are also good. Their associates are as a rule congenial, for we do not find many Cæsars or Napoleon Bonapartes among the epileptics of our land. A few epileptics retain their normal mental activity. The vast majority do not. So that as far as their mental condition is concerned, they do *not* find uncongenial company in our institutions. I wish to repeat that I do not oppose the establishment of separate institutions, providing such institutions are provided of sufficient size to furnish a good classification, but the point that institutions are urgently needed because the epileptic has not been properly cared for in the past, if such statement is intended to include juvenile epileptics, I do not consider well taken, as it, probably unintentionally, reflects upon very able men who have given this subject much valuable time and thought.

I do not care to weary you by going over the details of treatment of epileptics. Text-books are full of suggestions. New remedies are frequently brought out, highly extolled, and presently die a natural death. Some writers of long experience state that epilepsy is incurable. Others again claim a relatively high percentage of recovery. This difference of opinion between what may be regarded as competent authorities may arise as to a difference of opinion as to what constitutes recovery. Some hold that freedom from spasm during a period of perhaps two years should be justly regarded as recovery. Others hold the ground that there is no recovery unless we can guarantee that spasms will never return. The latter condition is perhaps too severe. We apply such a test to no other disease. One point I would like to dwell on, as a rule the treatment of epilepsy is begun too late and may be carried on in lines that can hardly be regarded as rational. It is probable that in many cases a commencement of this disease lies far back in childhood. The occurrence of spasms during dentition is not so light a matter as many people contend. Instability of the motor nervous centers may originate at that time. A child should be carefully watched after the occurrence, during any period of childhood, of night terrors, nervous twitchings, sudden and unaccountable outbreaks of temper, headaches, etc. These may all be looked upon as indicating an irritable or unstable condition of the nervous system, which may find its legitimate ending in convulsion. After the occurrence of eruptive fevers the child should receive especial attention and be closely watched until the condition of absolute health returns. While not condemning the bromides in treatment as decidedly as some do, I am under the impression that they may be, and frequently are, gravely misused. That spasm may be checked in nearly all cases by the use of large doses of bromide is not to be doubted. Some years ago I knew of a young physician, just graduated, being given charge of a building in which there were several epileptics. A rapid decrease in the number of spasms rapidly followed, but stomach pains and other symptoms of the gastric disturbance, unsteady gait, etc., were apparent in nearly all these cases, which he had immediately put on powdered bromide of potash in teaspoonful doses. His treatment was promptly suppressed. It is probable that the depressing effect of bromide on the activity of the upper nerve centers may also have some bearing on their nutrition. Is it rational to suppose that in an unstable brain such an effect is to be desired? Is it not conducive to the extension of any degenerative change which may be occurring? If, in the first stage of the disease, the parents could be persuaded that an occasional spasm is not a thing to be so very much feared, and that the brain change which causes the spasm is the actively dangerous element, we might be left more free to try other methods of treatment. I would earnestly advocate that instead of the powerful sedative, tonics should be freely given, such as phosphorus in some of its forms. Pyrophosphate of iron is an excellent tonic in such cases. If any sign of active degenerative change is noticed, iodide of iron is indicated. Chloride of gold has acted well in some of my own cases where given early. The child should be relieved from school duties for half a year or a year, leading a physically active life out of doors. The diet should receive the strictest attention, although if a child spend most of his time out of doors in active exercise, he will manage to digest almost anything. If we begin this tonic treatment at the first indication of nervous change, as manifested by the symptoms above detailed, I am inclined to think that the development of the epileptic habit might be less frequent. By benumbing the nervous centers by the use of bromides, we are liable to deceive ourselves, and underneath the quiet obtained by such remedies the nervous degenerative change may be going on unnoticed.

How long should our care continue? I beg to quote again from the paper of Judge Ashman a sentiment with which I am in the most hearty sympathy: "If then, by virtue of the seal of common humanity, which has been impressed upon him, as upon his more favored fellows, and by the further fact that his very appearance among us is in most cases possible only by reason of faulty legislation, or by lack of all legislation, the idiot is entitled to the care of society, by what standard shall that care be graduated? Here, I confess, I am an extremist. On every ground, whether of moral philosophy or of political economy, I hold that care should be continuous and continued. The idiot is an infant; he will always be an infant; and his pupilage should end only with his life. He needs to be secluded from the fierce contest of business, in which his powers will be overmatched, and from the fiercer onslaughts of vice, against which his feeble will will be powerless. He needs to be kept from propagating his own species." And also from the President's address given before the Conference of Charities in Toronto three years ago. "Their lives should be guarded and governed; they should be directed, guided and controlled. The State should say to each of them, 'My child, your life has been one succession of failures; you cannot feed and cloth yourself honestly; you cannot control your appetites and passions; left to yourself you are not only useless, but mischievous. Henceforth I shall care for you.' " I do not think these views are at all too radical. While I do not think that paternalism in the extreme sense is an altogether wise policy, yet it should be the privilege of the public to purge itself from all harmful influences, and if a class of persons is found to be a pronounced injury to society, it is society's right to take protective measures. This class furnishes a good share of the thieves and other petty criminals, and of the families who hover around the outskirts of towns, moving frequently, marrying frequently, often avoiding schools as they do soap and water, and rearing large families frequently to follow in their own footsteps. In the few cases where the trouble has been taken to hunt up the records of degenerate families, the vast number of criminals and other degeneratives is not only surprising, but shocking. I recently saw exhibited at an association meeting a picture of a group of seven adult imbeciles who had added twenty-six illegitimate children to hinder the world's growth and progress. The state, then, should see that the class of high grade imbeciles is provided with comfortable, congenial homes. In return they should bend their energies toward their own support. The stronger among them should help provide and care for the weak, and should seek and find happiness through its only true source, usefulness, among surroundings where they can be most useful. I am not sure that the immediate cost need be consulted, as I am quite certain that it costs no more to support them in a well conducted institution than it does in the community at large, when all things are taken into consideration. The greatest economy of such a system arises from the fact that securely kept and happily employed in a community by themselves, their increase is stopped and the cost of their maintenance ceases with their death, instead of being perpetuated in geometrically increasing ratio through their numerous descendants.

Note—For Discussion, see PEDIATRICS, July 1, 1900.

EDITORIAL COMMENTS

A Woman's Medical Fraternity

The following item of news has been sent to PEDIATRICS from Syracuse University. We print it with sincere pleasure, in giving publicity to a plan which has large possibilities of good for the participants:

"During the past year the women of Syracuse University, College of Medicine, have organized Zeta Phi, the first and only women's medical fraternity in this country. They esteem it an honor that Dr. Elizabeth Blackwell has consented to become a charter member, she having been graduated from this college, and the first woman to receive the degree of M.D. in America. The purpose of the fraternity is to bring the women of the medical profession into closer touch with one another."

B.

The Library of the New York Academy of Medicine

The reproach cast against New York libraries in general—that every facility is provided to keep the public from using the books—is a familiar one. Perhaps the very triteness of the complaint has made it ineffective. At all events, when remonstrance is made to those in authority and the inconvenience explained to which the public is subject, the answer, though in more courteous guise, is practically that of the well-known rich man of this city on another occasion, "The public be ——ed."—The Library of the Academy of Medicine has not been behind in the good work of obstruction. Though munificent donations and bequests have been made it for the specific purpose of furthering scientific medicine and helping the whole medical profession of the city and country to a wider knowledge, the real benefits of the collection are in large measure curtailed. No one but a member of the Academy can take a book home for even half a day. The library is closed all day on Sundays and holidays, and during the summer at 6 p.m. except on Saturdays, when it is open for two hours only. It is difficult to conceive of a more vexatious arrangement. The splendid collection of books it contains has naturally the largest attraction and greatest usefulness for the younger members of the profession. It is, however, just these whose labors for bread are most apt to keep them busy in the daytime, and whose leisure is usually limited to the evening hours and to holidays. While the Committee in Charge probably spend their summers in the Adirondacks or the Swiss Mountains, and are naturally indifferent whether the library is open or closed, the younger men of the profession are at home and willing to work, were the opportunity accorded. It seems rather strange that the lawyers in the Bar Association three doors away can, if necessary, continue their library work all night, while the doctors are unceremoniously turned out at 6 p.m. (or 10 p.m. at best) and, like children, sent off to bed.—It is a reasonable and perfectly practicable arrangement to keep the library open summer and winter alike, all day on holidays, half the day on Sundays, and till at least 11 p.m. in the evenings on week days. And all medical men in the city, upon depositing the cash value of the volumes taken, should be permitted to take books home for a short period. Should it be alleged that longer hours will increase the expenses, the reply is ready that in so important a matter curtailment should be practiced elsewhere, and the money thereby saved turned into the treasury of the library. In so vital a question as the education of the profession, obstruction is little short of an unpardonable sin. B.

School Break-Downs

In a brief article in the *Medical News* of August 11th, Dr. J. Henry Bartlett replies to an article entitled "A National Crime at the Feet of American Parents," which appeared in the *Ladies' Home Journal*. He challenges the statement that 16,000 children between the ages of six and fourteen years were taken out of school in five of our principal cities during the last school term because their nervous systems were wrecked by the the "infernal cramming system" practised. Although Dr. Bartlett proves that the number of school break-downs is largely overestimated, a number of such cases undoubtedly occur. The author quotes from an article entitled, "Over Study," by Dr. Leroy M. Yale. The latter holds that while break-down from overstudy does not occur in colleges and professional schools it is common among the young. Dr. Yale attributes such break-downs to "developmental processes." Dr. Bartlett mentions as contributory causes improper food and too great haste in eating, improperly regulated exercise, insufficient sleep, lack of proper ventilation, cleanliness, clothing, and nervous environment. He also lays some stress on the strain of examinations and the influence of unnatural stimuli. Much can be done to lessen these pernicious influences. It seems not unlikely that late rising, followed by a very hurried breakfast, no time being allowed for the calls of nature, may be the starting point of digestive disturbances more or less grave. Dr. Bartlett quotes Dr. Kraepelin's works, in which the latter holds that at twelve years only forty-five minutes of sustained attention is possible. Hence recesses should occur frequently. It would seem advisable that punishment for failure to recite correctly should be diminished as much as possible. If the pupil is "kept in" to review what he has not succeeded in learning thoroughly at first, he must not be made to feel that he is being humiliated. The system of cramming, with its ill effects, can be stopped by having impromptu examinations, so that the pupil will endeavor to keep prepared on a subject at all times, rather than trust to a sudden spurt to put him through. It seems very unlikely that the amount of brain work done by a young child can have any serious influence on his health. Much time is wasted over studies from lack of concentration; this is harmful. Inability to fix the attention is due to all of the various contributory causes mentioned above and many pathological conditions. In a self-conscious child contemplation of possible reward or punishment constitutes no small factor in causing school break-down. T.

Pultaceous Sore Throat in Children.—For pultaceous sore throat in children, Dr. E. Monmarson presents the following, which is said to be very efficacious:

℞	Calcium permanganate	gr.i—iii
	Aquæ dest.	ʒv

M. Sig.—For external use.

The throat is washed out with a very warm boric lotion every three hours during the day, and once or twice during the night. After each washing out the affected parts are painted with the above solution, care being taken to detach the false membranes, but without undue force.

On the second day there is said to be manifest improvement, and, in the majority of cases the disease is said to be aborted; the use of an exclusively milk diet and the administration of a few doses of antipyrin completing the cure.—*Jour. A. M. A.*

Convulsions in Children.—It is recommended that a warm bath or mustard bath be given the child, and to prevent recurrence of convulsions give the following:

℞	Potassii bromidi.	
	Sodii bromidi.	
	Ammon. bromidi, āā	gr.viii
	Syr. aurantii	℥i
	Aquæ destil., q.s.ad	℥iii

M. Sig.—One to three teaspoonfuls every 15 or 20 minutes for a child two years of age or older.—*Jour. A. M. A.*

SOCIETY REPORTS

PHILADELPHIA PEDIATRIC SOCIETY.

Stated Meeting Tuesday, April 10, 1900.

The President, Dr. ALFRED STENGEL, in the Chair.

Symposium on Diseases of the Heart in Childhood.

Dr. ALFRED HAND read a paper on **The Pathology of Congenital Heart-disease.**

Many classifications have been suggested, none being perfect. As a good working basis, Osler's is useful, which divides the lesions into those due to (1) faults of development, (2) fetal endocarditis, (3) a combination of both. According to Peacock, hearts with two or three cavities result from defects occurring before the sixth week, septal defects and misplaced vessels arise between the sixth and twelfth weeks, and anomalies of the valves and persistence of fetal openings occur after the twelfth week. The causes of endocarditis in the fetus are: infectious fevers in the mother, especially rheumatism; syphilis, it may occur without illness on the part of the mother; micro-organisms may penetrate the placenta or toxins may pass from the mother to the fetus and cause the inflammation; favoring the latter view is the form of the endocarditis which is always the sclerotic or chronic and not the warty. Reasons for the inflammation affecting the right heart oftener than the left are that congenital anomalies are more common on the right, there is more work to be done and oxygen is present in greater amount in the blood. Some of the lesions were then discussed Holt's table being quoted, which places defect of the ventricular septum as the most frequent, followed by defect of the auricular septum and pulmonary stenosis.

J. DUTTEN STEELE discussed **The Pathology of Acquired Heart Disease in Children.**

The heart of children responds more quickly to demands upon it, and hypertrophy is quick and considerable in amount. Also, as the tissues are more yielding, dilatation occurs easily. This is due to the general tendency of the child's tissues to adapt themselves to changed conditions. Acute rheumatism is more apt to affect the heart in children than in adults and is often a primary manifestation of the rheumatic process rather than a complication. The most serious lesion, as far as the immediate outcome of the attack is concerned, is a myocarditis of the infectious type. Endocarditis is important chiefly in respect to its more remote effects. A pericarditis is probably the most frequent form of rheumatic affection of the heart. Puerperal infection in the new-born may cause inflammation of heart or any of its membranes. Acute infectious forms are a frequent cause of heart disease in children. Here also myocarditis is the most serious as well as the more frequent. Diphtheria affects the myocardium especially, rarely the serous membranes. Scarlet fever also causes a myocarditis and sometimes pericarditis and endocarditis as well.

Scarlatinal nephritis usually produces hypertrophy and often dilation of the left ventricle.

Rachitis sometimes causes hypertrophy of the right ventricle.

The remote effects of the congenital lesions are hypertrophy and dilation, usually of the right side. Such anomalies appear to render the heart a point of lesser resistance to infections.

The three forms of myocarditis of most importance in childhood are, the acute infectious, the suppurative—usually produced by infective embolism, and the chronic interstitial, oftenest caused by syphilis. Quick response to stimuli, ability of the general nutrition to recover itself, and the absence of changes in the coronary arteries render the heart in children much more liable to hypertrophy than in the adult, and make compensation much more thorough. Dilatation is almost always present as well. The right ventricle is relatively oftener enlarged than the left. The reason for this is the absence of arterial sclerosis and the rarity of aortic stenosis in childhood.

Pure dilatation is rare. Failure of compensation is not common in childhood. Acute endocarditis affects the mitral valve in a great majority of cases. The relation of aortic disease to mitral in adults is thirty-two to twenty-two. In children eleven to two. When embolism occurs it is usually in the arteria Sylvii fossæ sinistra. Of the chronic changes in the heart valves mitral regurgitation is first and mitral stenosis second in frequency.

Dr. F. A. Packard read a paper on **The Symptomatology of Heart-disease in Children.** Stress was laid upon the absolute absence of characteristic symptoms of valvular disease in children and the fallacy of depending on any means of diagnosis in this condition except that by physical examination. A summary was given of the statements made by various authors to this division of the subject, and an analysis of fifty-six cases in regard to the frequency of the various symptoms was made.

Dr. J. P. Crozier Griffith discussed **The Diagnosis of Heart-disease in Children.**

Dr. Meigs, in discussing the prognosis, stated that in general it is better than in adults, because the tissues of children are less stiff and more readily undergo repair. Cardiac disease may even disappear in some cases in children, and the prognosis, generally speaking, is more favorable than in older persons. The prognosis should be bad or good, according to the presence or absence of involvement of other organs than the heart in the disease. If the other organs are healthy the prognosis is good, but if other organs are diseased the prognosis is consequently bad. As to changes in the heart itself, he had found that in the cases with great cardiac enlargement the worst prognosis should be made. The character of the murmurs is a matter of relatively little importance in prognosis. He spoke of two cases in which he had observed the disappearance of organic murmurs; in one of them heart disease followed an attack of measles in a child 8 years of age. Now, twenty-six years afterward, the patient shows no sign of cardiac disease. In another case, after chorea there was a murmur which seemed organic and great irritability of the heart. The patient is now 23 and has no murmur, but still some cardiac irritability. He emphasized the fact that patients with heart disease may have long lives. One patient whom he had observed for years, and who died when over 70, was said to have had cardiac disease since early childhood. A woman whom he had attended had cardiac disease since her early childhood and died when she was over 50.

Dr. Hare, in discussing the treatment, first noted that children are oftentimes entirely free from symptoms, even when organic heart disease is present, and that, therefore, treatment is often superfluous. When treatment is necessary he considers that rest constitutes in importance about three-fourths of all management. He disbelieved in the attempts which are often made to encourage the growth of these children. The stunting is a compensatory process to relieve the damaged heart from as much work as possible and it should therefore not be interfered with. He considered puberty a particularly dangerous period for these children, and insisted that rest is very important at that time. Among drugs he considered alteratives the most important, and thought that arsenic was most valuable, chiefly through its action on the blood. Anemia is frequently the most important symptom present, and through the improvement of the blood and of the general nutrition of the body arsenic has a valuable influence. The bichloride of mercury in doses of 1-1000 to 1-3000 of a grain is also valuable. The use of cod liver oil he discountenances, as a rule, because it is likely to increase the accumulation of tissue and particularly of fat and thus damages the heart by increasing its work. As a rule he considers hematics the most important drugs. Digitalis, he insisted, is used in too large doses, particularly in children. It is likely to show its bad effects more readily in children than in adults. When it is given, he recommends that very small doses should be used, 1 to 2 minims or less, unless an emergency should demand larger doses. Also, it should be given for a few days and then stopped for several days, to be resumed again. Its action persists sufficiently long to make this method of dosage all that is necessary and its continuous use is fruitless and likely to be harmful. Strychnine he also considered a seriously abused drug. Temporary good effects are sometimes seen from the use of strychnia in heart disease, but its effects do not last, and increased doses are then necessary, and this ultimately causes severe general nervous irritability of the heart with other tissues. He mentioned the case of a child that had a pulse of 160, of irritable character, with slight persistent temperature following typhoid fever. The child had been on doses of 1-30 grain of strychnia four times a day for a long time, and when the strychnia was stopped the pulse rapidly decreased to normal and the temperature soon disappeared. He stated that strychnia is a whip to the heart and not a tonic. As to alcohol, he considered that it is rerely necessary in heart disease of childhood.

Dr. **Stengel.**—The discussion has been of great value in directing attention to the peculiarities of cardiac disease in children. The descriptions that are found in text-books on diseases of children are oftentimes incorrect and confusing, because the experience is derived to a considerable extent from the study of adult cases. The symptomatology, especially, as Dr. Packard has said, is frequently very obscure in children. One symptom which I found to be very common and striking is a peculiar listlessness and disinclination to play. In boys there is often a tendency to become very girlish in manners and in the forms of their diversions; they are likely to play with girls because the sports of other boys are physically too rough for them. They may take up needle-work and similar amusements. Mitral stenosis particularly has, in my experience, often been associated with hypoplasia, and in boys with both physical and mental femininity. To my mind, the most striking symptoms of cardiac disease in children is the general behavior of the child. Dr. Griffith has spoken of idiopathic edema of childhood, and I agree with him that this is a common condition, but it is always well in such cases to be on the lookout for obscure cardiac disease. One case which I have observed, both at the Children's Hospital and the University Hospital had pronounced edema, which was, so far as we could determine, without organic cause. There were no signs of cardiac disease for a long period, but ultimately cardiac disease was discovered. It is not improbable that a considerable number of cases of idiopathic edema in children are the result of obscure cardiac disease, which at the time of observation was undiscoverable. As to the treatment, I fully agree with Dr. Hare that digitalis is greatly abused, and that it is, as generally used, more likely to do harm than good. Indeed, I have seen few cases in which it did good, while I have observed a number of instances in which serious harm resulted from its use.

Dr. A. E. Roussel.—There are many points of interest in the papers read this evening, but lack of time will permit but the discussion of one or two which have particularly attracted my attention.

Regarding the statement of Dr. Steele, that he has been unable to find any record of cases of ulcerative endocarditis following measles, I would state that such cases do exist and are probably more common than given credit for. Dr. Meigs has mentioned one such case this evening and I recollect at least one other.

A young woman about 18 years of age was admitted under my care at the Howland Hospital this winter with the following history:

Some three weeks previously she had a severe attack of measles, and after having entered into convalescence was suddenly seized with severe chills followed by fever, sweats and marked prostration. After further treatment by the family physician for about two weeks she was removed to the hospital where she died within thirty-six hours. The autopsy confirmed the hospital diagnosis.

The diagnosis of these cases is by no means easy, especially when, as mentioned by one of the speakers, the murmur may be absent until late in the disease. Last winter I treated a case of this kind at the Medico-Chirurgical Hospital. A boy, about 12 years of age, had entered into convalescence after typhoid fever, and had a normal temperature for about a week, when he was taken with a series of chills accompanied by an intermittent fever, sweats, etc. This continued for about two weeks, during which time no cardiac murmur could be detected. The spleen now commenced to enlarge until it reached as low as the level of the umbilicus, and about one week before death the heart murmurs appeared. Autopsy showed a beautiful specimen of ulcerative endocarditis and infarct of spleen.

My experience differs from the views endorsed by Dr. Meigs concerning the rather favorable prognosis of valvular diseases in children. It is my observation that most of those affected in this manner are apt to die at about the period of puberty. Not only is the compensative hypertrophy and subsequent dilatation a much more rapid process in the young, but it is at this time that additional demands upon the heart are made by the system, and as a rule this organ is not equal to the strain. And again, I must confess myself rather skeptical concerning the total recovery from a previously well defined case of valvular disease of the heart. Doubtless many previously existing murmurs disappear, but given such a murmur with definite existence of cardiac hypertrophy as corroborative evidence, the restoration of such a condition to a perfectly normal heart must be very rare.

Dr. ROBERTSON.—I have recently observed a peculiar form of dyspnea in a case of acute endocarditis, which arose after exposure. The patient presented first a mitral regurgitant murmur, beginning thirty-six hours after the onset of joint involvement, this latter, as is often the case, being insignificant in character; thirty-six hours later there was a murmur of mitral stenosis. The peculiarity of the dyspnea was that while the child was usually breathing from 60 to 80 times in the minute, its respirations would suddenly run up to from 105 to 110 a minute, the rapid respiration not being accompanied by any signs of distress, and being therefore not a real dyspnea but a condition that may be likened to tachycardia, and is well described only by the word tachypnea.

Dr. MEIGS.—Apropos of the mention of the occurrence of edema from obscure cause, I would speak of a case which I saw years ago in a child between one and two years of age. The baby had had summer complaint, but had improved greatly when edema of the feet aad ankles appeared and became so marked as to cause extreme distention of the skin. It was a strikingly hard form of edema, which did not pit on pressure. The boy recovered entirely from this and is now 14 years old, is thoroughly well, and engages in trying athletic games. He has never been very ill since and has never had any evidence of heart disease, and heart disease cannot be said to have caused his edema. The case is a confirmation of the statements of Dr. Griffith and Dr. Stengel and others that edema may appear in childhood and not be traceable to any organic cause.

Dr. Hare.—I can confirm Dr. Meigs' statement, that many of these cases have very long lives. One case, for instance, that I have observed is that of a man of 57 who had scarlet fever at 7, and probably had endocarditis at that time. At any rate, he says that he has been told since his early childhood that he had organic disease of the heart, and he certainly has it now. He has been strongly addicted to alcohol, and has led a hard life, but in spite of this he has fair comfort, and has lived, as I said, to be 57 years of age. Another man whom I have observed, and who is now over 60, has had mitral stenosis probably since his early childhood and suffers no inconvenience from it. These are exceptions, however, and children with cardiac disease are likely to get along fairly well until they are nine or ten years old. They oftentimes begin to show distress at this time, and in later childhood, about the period of puberty, they become seriously distressed and oftentimes do not reach adult life.

Dr. Griffith.—I wish to say only a word concerning prognosis. The general impression left by the previous speakers is that these children are extremely likely to die at puberty. While this is oftentimes the case it is certainly erroneous as a general statement.

Dr. Robertson.—I have observed one case of interesting edema in a child between two and three months of age. The infant was overfed, and had an acute enteritis which had persisted for three weeks in spite of treatment. An edema of the face, hands, and feet then appeared, which was of the same curiously hard character as in the case mentioned by Dr. Meigs, and did not pit on pressure. There was no heart lesion evident, and I had the urine collected and examined it. It showed a good deal of albumin with hyaline and hyalo-epithelial casts and renal cells, and some leucin and tyrosin. The child died soon after of exhaustion. The post-mortem showed no macroscopic kidney lesion and no heart lesion. There was, however, an infarct in the lung, and cultures from this infarct, from the spleen, and from the heart-blood showed a streptococcus. The case was undoubtedly an acute infection, and I think there was probaby a nephritis, which would have been evident upon microscopic examination, but was not apparent to the naked eye. Notwithstanding the diarrheal trouble, there were no gross intestinal lesions post-mortem, thus seeming to indicate an effort on the part of the bowel to throw off the poison. This also is an example of the fact that leucin and tyrosin may be found in other conditions than in acute disease of the liver.

Otorrhea:

℞	Liq. plumbi subacetatis (Goulard's ext.)	m.xx
	Acidi acetici diluti	m.vi
	Vini opii	m.xx
	Aquæ destil., q.s. ad	℥i

M. Sig.—Drop 10 drops into the ear three or four times a day, previously warmed.—*New York Med. Jour.*

For Mumps:

℞	Ichythyol.	
	Plumbi iodidi, āā	gr.xlv
	Ammon. chlorid	gr.xxx
	Lard	℥i

M. Sig.—Apply to swollen glands three times daily.—*Jour. A. M. A.*

Linseed Meal Poultice.—Warm a basin, pour in *boiling* water; sprinkle in the meal, stirring vigorously, till it becomes of the consistency of thick porridge; spread on tow or old linen, turning in the edges all round; before applying put it against one's cheek to feel that it is not too hot. Retain in position with a broad flannel roller, secured with safety-pins. Renew every four hours or oftener. The poultice should not exceed half an inch in thickness. Caution is necessary in poulticing the chest of *infants*, in order not to overload the chest and tire out the respiratory muscles.—*Ashby & Wright.*

ABSTRACTS

THE TREATMENT OF NOMA.

M. SCWEITZER (*Vratch*, April 1, 1900, quoted in *Gazette des Hôpitaux*, May 31, 1900) recommends the following treatment of noma: All the sloughing tissues are removed by means of a sharp curette. The ulcerated surface is next washed with boric acid or with permanganate of potassium solution (1:1000 in hot water) and then dusted and rubbed with iodoform powder. A dry dressing is then applied. If it is impossible to remove all the dead tissue with the curette a dressing of gauze wrung out of a solution of permanganate of potassium is applied instead of the dry dressing. If the necrosis continues on the following days, one repeats the curetting and the dressing. The ulcerated surface is washed twice daily and the iodoform is applied once daily. The writer saved five children out of six with this method of treatment.

THE CLOSURE OF A CLEFT PALATE BY LINGUAL IMPLANTATION.

CARL BECK (in the *N. Y. Med. Journ.*, June 30, 1900) says: "In a case of cleft palate in which the Langenbeck as well as the Davies-Colley operation failed to cover the immense congenital defect I recently implanted a portion of the tongue. The ease with which even extensive resection of the tongue is tolerated by carcinomatous patients induced me to form a lateral flap from the tongue, which, after being turned and reflected near the base, was united with the freshened edge of the cleft of the same side.

"The gaping wound margins of the side of the tongue were accurately united then and the floor of the mouth and the lingual angle packed with iodoform gauze. During the after-treatment a mild solution of boric acid was sprayed through the nostrils every fifteen minutes. Liquid diet was given exclusively. After nine days the basis of the flap was severed and one week later the flap was united with the opposite margin of the cleft according to the usual uranoplastic procedures."

TANNIGEN IN DIARRHEAS FOLLOWING SCARLET FEVER

KÖLBL (*University Medical Magazine*, June, 1900) has employed Tannigen with uniformly pleasing results in the diarrheas following scarlet fever or simple acute enteritis and those diarrheas of obscure origin apparently chronic from the beginning. His cases were of all ages from nine months to forty years, and of all degrees of severity.

FOREIGN PEDIATRIC JOURNALS.

Abstracts of all Original Articles Appearing in Foreign Journals Devoted to Pediatrics

ANNALES DE M. ET C. INFANTILES, JULY 1, 1900.

Two Forms of Pseudomeningitis Due to Ascarides.—By Dr. Meriel. The first case presented the characteristics of acute meningitis. The patient was a child aged ten years, of tuberculous parentage, weakly and nervous. The illness began with pain in the right ear and a discharge of yellowish pus from the meatus, together with a moderate febrile movement. Five days later the patient developed all the symptoms of acute meningitis, and it was thought that this was the result of the otitis media. This state continued for eight days, and the usual treatment of acute meningitis seemed to be of no avail, the temperature remaining high, and the delirium marked. On the ninth day the child passed an ascaris, about five or seven centimeters long, and in perfect state of preservation. Santonin and calomel were then prescribed, but the patient remained semiconscious and delirious for the next twenty-four hours, during which he passed another worm. On the eleventh day the temperature began to fall and became normal four days later, the general condition improved by degress as the temperature fell. The convalescence was brief and uneventful. The author emphasizes the necessity of examining the stools of these patients, and calls attention to the fact that, contrary to the generally accepted notion that meningeal symptoms due to ascarides are not accompanied by fever, in this case the febrile movement corresponded to that of an acute meningitis.

The second patient was a girl aged nine years. The case began like an ordinary attack of meningitis, without any apparent cause. The symtoms gradually became worse, and on the sixth day there was delirium, convulsions, strabismus, grinding of the teeth, and hydrocephalic cry; The pulse was slow, only 65 per minute, the temperature 37°C. The existence of ascarides was suspected, and santonin 0,05 with calomel 0,15 were prescribed.

Two days later four ascarides were found in the stools, and the dose of the vermifuge was repeated, but no more worms were passed. A favorable prognosis was now given, the symptoms gradually disappeared, and the patient was perfectly well two weeks later. This case resembled tuberculous meningitis to such a degree that it could not be distinguished without the test of treatment.

3. **The Diagnosis of Pulmonary Tuberculosis in Children.**—By Lucien Bertherand. (Analysis of a Thesis). In speaking of the methods of diagnosis that may be employed in pulmonary tuberculosis of children, the writer says that auscultation alone will rarely give an exact result. He

warns against a reliance upon the physical signs of cavities. The degree of dyspnea is not always in proportion to the extent of the pulmonary lesions. A dyspnea without any apparent physical reason should make us suspect tuberculosis. Bertherand thinks that tuberculin, if used with prudence in selected cases, is harmless and efficient as a means of diagnosis. It serves to distinguish infants with tuberculous heredity from those of healthy parentage. The latter can stand considerable doses of tuberculin without reacting, while the former react after minute doses. Infants who present the most marked reaction have tuberculous lesions. No untoward effects are noted except an induration at the point of inoculation, which disappears in a few days. The reaction takes place five hours after the injection, and lasts twenty-four hours. No other symtoms are observed besides the rise of temperature. The tuberculin must be fresh, in sealed glass tubes. The initial does must not exceed 1 milligram.

Injections of artificial serum have been used by Hutinel to test the patients in whom tuberculosis was suspected. The rise of temperature which results in such cases after the injection is presumptive evidence of tuberculosis, but not a sure sign.

The examination of the sputum for tubercle bacilli is difficult in children under seven years, because they do not expectorate. A metal applicator may be introduced, with a little aseptic cotton wrapped around its end, into the back of the throat, or a laryngeal applicator may be introduced down to the glottis. The reflex cough which follows will expel some sputum and bring it into contact with the cotton. The feces or even the gastric contents may be examined for tubercle bacilli. In certain cases of tuberculosis no bacilli are found by any of these methods, because the process is circumscribed.

Radiography is a valuable means of diagnosis. The writer used Sayre's suspension apparatus to secure the children in position. This method is more useful in older children whose bones are already ossified, and thus present a stronger contrast to the visceral contents of the thorax. Radiography, says the writer, is more useful in adults than in children in the diagnosis of tuberculous lesions.

4. **Hippocrates Regarded as a Pediatrist.**—By J. U. Troitsky. (Continued).

5. **Concerning Prophylactic Serum Therapy (in Diphtheria).**—By Dr. Violi.—See abstracts from *Pediatria*, June, 1900. Pediatrics, Vol. X., p. 237.

6. **Doubtful Cases at the Hôpital des Enfants Malades in Paris.**—By Dr. Moizard. The writer has had charge of the isolating rooms for doubtful infectious cases attached to the hospital for sick children in Paris, since the organization of this special service in 1896. During this period he observed 5,016 children in whom the presence of a contagious disease was suspected, and who, therefore, were not admitted to the general wards. Of this number only seven developed a contagious disease, and

six of the latter were cases of measles. The isolating rooms were built by dividing a large ward, originally intended for forty beds, by means of glazed partitions, each little room corresponding to one of the ten windows on each side of the ward, the twenty rooms opening by separate doors into a hall that runs through the ward. The partitions do not reach to the ceiling, so that the air of the ward is breathed by all the patients. The experience of four years showed that contagion is not spread by the air. This arrangement permits the heating of the ward by means of registers. The partitions consist of a wainscoting and wooden frames with panes of glass, so that all the children can be observed simultaneously from the hall. The doors are also glazed. The partitions are 2.10 metres high and fixed to the floor by means of iron plates and screws, but they are five centimeters above the level of the floor. The walls of the rooms are enameled so that they can be washed; the floor is of hardwood, paraffined. The furniture is aseptic, metallic throughout.' All dishes served indiscriminately for all children, but they are boiled after each meal in a solution of carbonate of soda. The spoons, knives, forks, etc., are reserved for each patient, but they are also sterilized after having been used. The floor is never swept, but wiped with cloths wrung out of a 1 to 1000 solution of oxycyanid of mercury or of corrosive sublimate. After a patient leaves the room the furniture and the walls are washed with 5 per cent carbolic acid solution and the bedclothes sent to the laundry. In each box or room there are always three or four gowns,and upon entering the room each person must put on one of these gowns and take it off on leaving. Before leaving the room each person also plunges the hands into a basin with oxycyanid of mercury (1:1000). In this way the physicians and nurses can go from one patient to another witout fear of carrying infection.

The Treatment of Muco-Membranous Colitis of Children.—The *Journal des Practiciens* for June 9th says that in chronic colitis of children with habitual constipation, shedding of the mucous membrane, a form of colitis which commonly succeeds the acute forms, the treatment is the same as for adults: Intestinal lavage, oily injections (2,250 grains), castor oil in small or large doses (from 150 to 300 grains daily), and calomel occasionally. Henoch prescribes:

℞	Hydrochloric acid	7½ grains
	Distilled water	1,500 "
	Gum arabic	15 "
	Syrup of althæa	300 "
	Thebaic tincture	from 2 to 4 drops

M. A coffee or dessertspoonful three or four times daily.—*New York Med. Jour.*

PEDIATRICS

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VOL. X. OCTOBER 15th, 1900. No. 8

ORIGINAL ARTICLES

THE TREATMENT OF SCARLATINAL NEPHRITIS.*

By ROBERT COLEMAN KEMP, M.D.,
New York.

(Continued from October 1st issue.)

Normal Saline Solution in Scarlatinal Nephritis.

One of our most valued agents in the treatment of nephritis is normal (or rather decinormal) saline solution. Roughly speaking, a drachm of salt to the pint of sterile water is the proper solution to employ.

The action of normal saline solution is diuretic and eliminative. It also stimulates the circulation and respiration.

It can be employed by three methods: Enteroclysis (continuous) or by enema, hypodermoclysis, or by infusion.

At this point we wish to call to your attention the specific action of normal saline solution in promoting renal secretion. Foster has demonstrated that a small infusion of normal saline solution exerts a powerful diuretic action, though the quantity infused was insufficient to cause any rise of pulse tension when tested with the mercurial manometer. We secured similar results by similar methods. Foster cut the renal nerves and repeated the experiment; profuse diuresis occurred. He concluded justly that a specific action was produced on the secreting cells by the normal salt solution as no circulatory changes of appreciable character could be detected.

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* Read before the New York Academy of Medicinel April, 1900.

Experimentally we employed a minute quantity of saline solution by hypodermoclysis with resulting marked diuresis but no change in pulse tension.

Small enemata of normal saline solution or enteroclysis with the fluid at the temperature of the body produced diffuse diuresis, though no rise of pulse tension occurred.

The method by which we secured absolute proof that the diuresis was due to the saline solution, that is, to its specific action on the kidneys, and not to its influence on the circular tion was as follows:

The manometer was in each case attached to the carotid artery. One ureter was catheterized and the drops of urine were conducted through a glass tube so that they struck a lever supported by a tambour and were caught in a small vessel beneath. Each movement of this tambour was transmitted through a tube containing a column of air to another tambour on which a pen was supported; thus every urine drop was registered in the form of an inverted V.

Part of this mechanism was employed by us in our experiment entitled, "Further Experimental Researches on the Effect of Different Anesthetics on the Kidneys," *New York Medical Journal*, November 18, 25, December 2, 1900.

The photograph, Fig. I, shows it well. There are in this, however, the tracings of the kidney on the long revolving drum, also an excellent reproduction of Hoyt's oncometer. A weak solution of potassium ferrocyanide 1/40,000 was added to this normal saline solution and the urine as it fell from the lever into the receiving vessel was tested every fifteen to thirty seconds with chloride of iron. This method was carried out respectively with infusion, hypodermoclysis, enteroclysis and enema, as heretofore stated.

Extremely small quantities of fluid were employed by infusion, hypodermoclysis, enema, and enteroclysis.

Infusion: In one and a half to two minutes renal secretion was markedly increased and synochronous with this the prussian blue reaction was obtained through the action of the chloride of iron on the potassium ferrocyanide.

Hypodermoclysis: In three and a half to four minutes, diuresis was marked and the reaction was obtained.

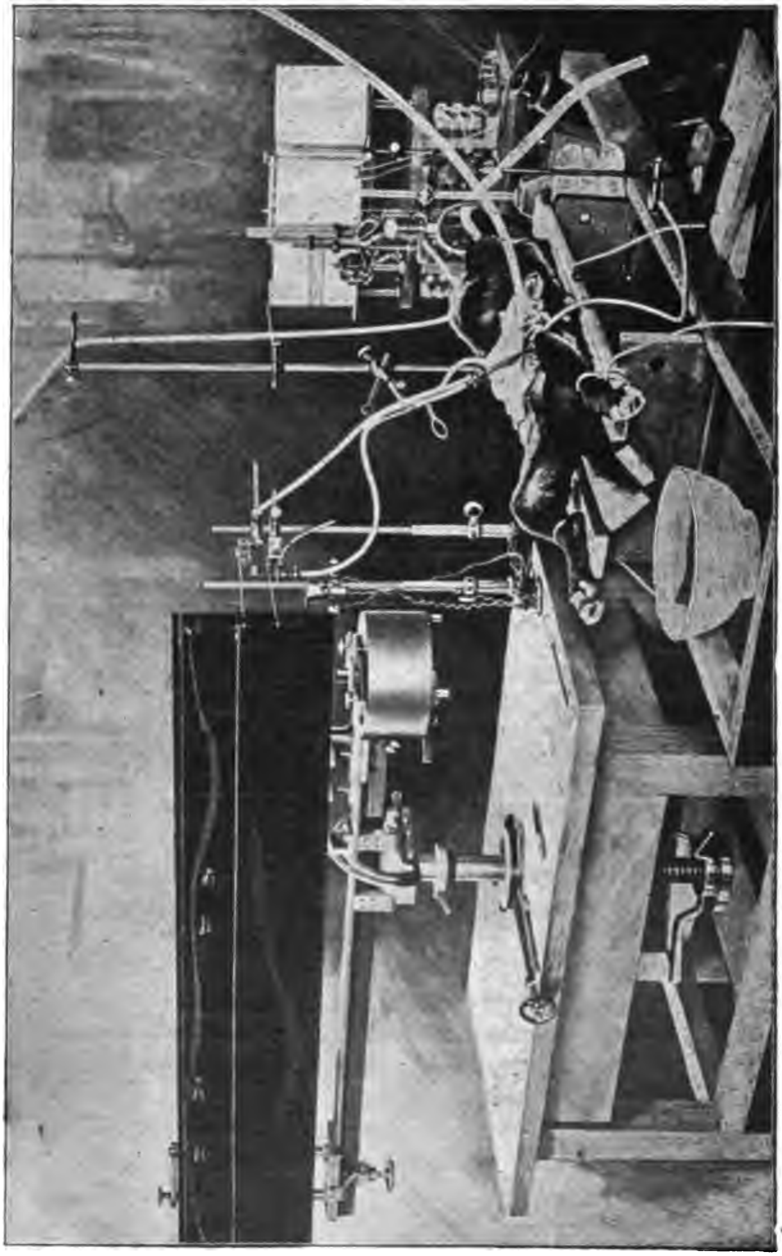
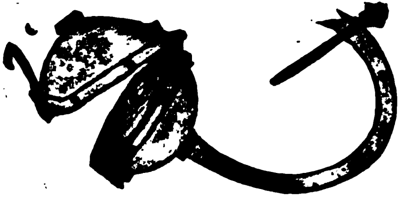


FIG. I.—Illustration of the experiment on the effect of either on the kidneys.



Hoyt's Oncometer

Enteroclysis (at 100° F.): In twenty minutes, diuresis was marked and this was coincident with the prussian-blue reaction. This effect was clearly due to absorption of the fluid.

Note the temperature of the fluid by enteroclysis. This is an important feature. Small enemata gave the same diuretic effect. Dr. L. Bolton Bangs has secured reaction of potassium iodide given by enema in twenty minutes in the urine.

There was no rise of pulse tension in the above experiments when tested by the manometer. The effect, therefore, on the kidney secretion was specific and not due to the circulatory changes.

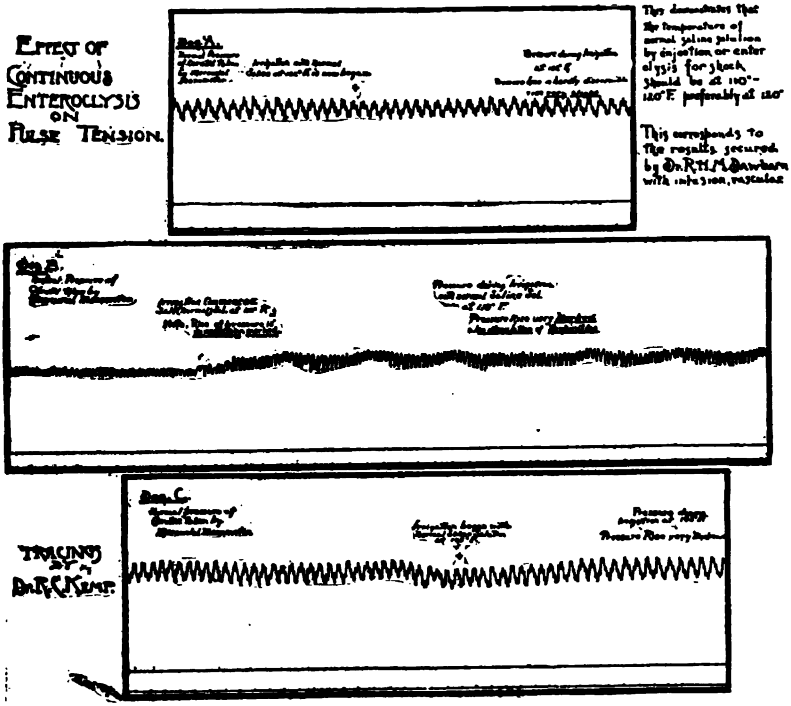


FIG. II.

On the other hand the temperature of the fluid in enteroclysis is of utmost importance, as by the higher temperatures we can obtain a far better result through the effect of stimulating the general circulation and respiration, also the bowel and skin secretions.

We have but just called to your attention that enteroclysis at 100° F. causes no appreciable rise of pulse tension. The tracings in Fig. II, we believe, will prove of interest.

You will observe that enteroclysis at a temperature of even 102° F. causes scarcely appreciable change in the pulse tension; at 105° F. only moderate rise, but that at 110° F. there is immediately a marked pressure rise and also respiratory stimulation.

With all temperatures of normal saline solution, whether high or low, we invariably secured increase of renal secretion at the end of twenty minutes, coincident with the prussian-blue reaction in the urine, showing that it was due to absorption of the fluid and its resulting specific action on the kidney secretion.

Normal Pressure 155 M M.
Pressure after Venesection 112 M M.
Enteroclysis with Normal Saline Solution at 110°–120° F was then given and at the end of ten minutes the pressure rose to 140 M.M.

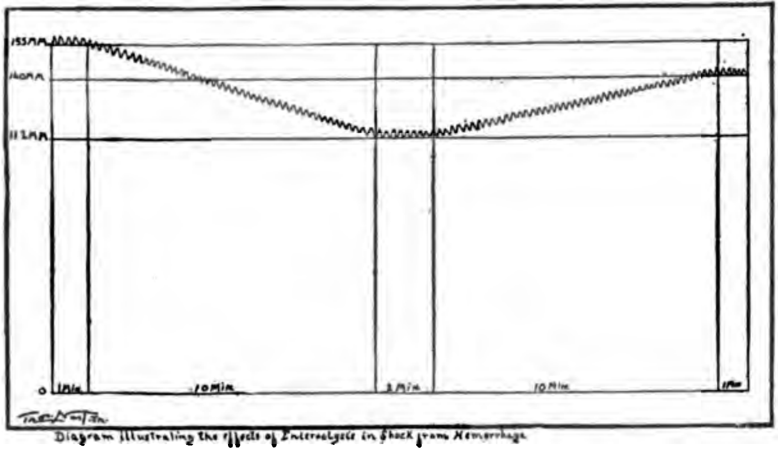


Diagram Illustrating the effects of Enteroclysis in Shock from Hemorrhage

FIG. III.

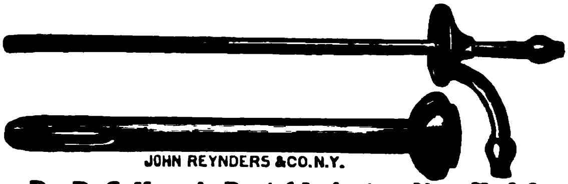
On the other hand if we employed enteroclysis at 110°–120° F. there was an increase of renal secretion which was quite marked at the end of ten minutes in addition to the increase in twenty minutes from absorption.

This diuresis at the end of ten minutes of enteroclysis at the high temperature corresponds to the general circulatory improvement, which, when high temperatures were employed, appeared to reach its maximum point at that time.

Thus in shock from hemorrhage, produced artificially by venesection, the normal pressure was reduced from 155 mm. to 112 mm. and in ten minutes following enteroclysis at 110°-120° F.; with normal saline solution it had risen to 140 mm., where it remained. (See Fig. III. Diagram by Thos Nast, Jr.

FIG. IV.

NEW MODEL TUBE.



Dr. R. C. Kemp's Rectal Irrigator, New Model.

Outer tube, hard rubber; central tube of metal.—Hard Rubber Flange, protecting Sphincter from transmission of heat, through the metal parts.

The temperature of the body and blood are slightly increased by enteroclysis at this temperature. The fluid in the large intestine is also contiguous to the kidneys and the local heat is of benefit. These experiments appear in the *N. Y. Medical Journal*, Jan. 29, 1898, entitled "Physiological Experiments on the Effect of Enteroclysis at Various Temperatures on Pulse Tension, Temperature, Renal Secretion and Intestinal Absorption, etc." It might be objected that even a temporary increase of pulse tension, especially if such already exist, and the slight increase of temperature might do

FIG. V.

FLEXIBLE IRRIGATOR.

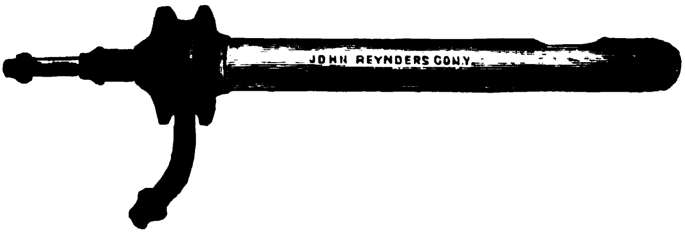


FIG. V. Represents the flexible adult rectal irrigator. It can be employed in sensitive cases or for infants and children. With infants it can be passed through a perineal pad and inserted only part way. There is also a soft tube with a metal center which can be curved to suit. It is the same shape as the flexible tube.

harm, but clinically the profuse sweating, diuresis and bowel action which result from enteroclysis at 110°-120° F. are followed by a fall of pulse tension and a general improvement. Drs. Wm. H. Thomson, Egbert Grandin and Simon Baruch have secured identical results and hold this same view of the subject. Should the vessels be atheromatous or the pulse tension be extremely high, a preliminary injection of nitroglycerin can be given.

FIG. VII.

HARD RUBBER IRRIGATOR.

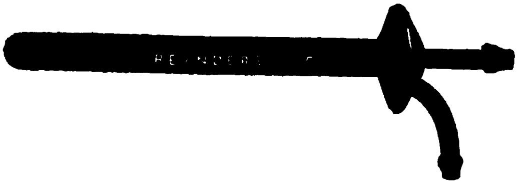


FIG. VII. Represents the hard rubber irrigator.

A low temperature of the irrigating fluid at first is stimulating but later is depressing. Cold injections we believe contra-indicated in renal complications.

FIG. VIII.

GLASS IRRIGATOR.

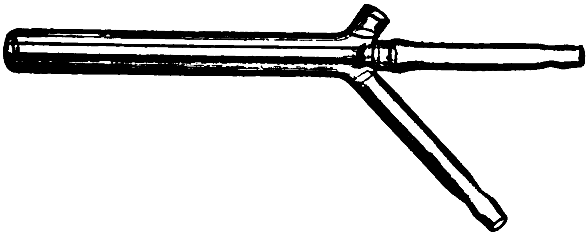


FIG. VIII. Represents the glass irrigator with opening for cleaning purposes. A cork is inserted here when in use. The glass tubes are also manufactured without this opening. The objection to these is that they readily break, and on this account for practical use are no cheaper.

We have employed enteroclysis at 110°-120° F. with normal saline solution for fifteen minutes to an hour continuously depending on indications, and as frequently as three to four times a day in oliguria, uræmic convulsions, uremic coma, dropsy, suppression of urine, pulmonary e dema, plurisy with effusion, and with satisfactory results. We show you an improvement in the double-current tube, fig. iv, the outer tube of hard rubber, the center tube of metal, and therefore more durable than the old, all-rubber tube. The metal center at its junction with the hard rubber is guarded by a rubber flange to prevent contact with the hot metal.

For practical use we employ the new model tube fig. iv, and the flexible fig. v for infants, children, or sensitive cases.

A continuous enema can be given by the double-current method and the temperature kept up. The diuresis is also an excellent eliminative for the toxins, as are also the resulting bowel action and sweating. Dr. Thomson has observed complete absorption of a pleurisy with effusion due to oliguria as a result of employing this method. Enteroclysis can of course be employed with a single tube. An improvised double-current tube can be made by using two catheters, a smaller for the entering current, tying them together with threads and passing them through a perineal pad of gauze and cotton covered with oiled silk, or even a dress shield oilcloth, marble cloth or rubber sheeting.

Method of Attachment.

Attach the fountain syringe to the central tube and the carry-off-tube to the larger curved lateral tube.

By alternately pinching this and the tube of the fountain syringe, the quantity of fluid entering and escaping can be regulated, as the outflow is larger than the inflow, and unless the outflow is checked no fluid will pass up the bowel.

Insertion of the Instrument.

1. The tube should be well lubricated and inserted with a gentle rotary motion and not forced in. The tip of the instrument should be directed slightly backward toward the sacrum, and the fluid allowed to flow as it passes the sphincter.

2. If the flow ceases, rotate the tube slightly or withdraw it slightly while rotating and push it back.

If the outflow seems plugged, stop the inflow and then force fluid back through the outflow tube with a small hand syringe or detach the fountain syringe and force the flow back through the outflow tube for an instant.

Sometimes, "milking" the outflow tube with the fingers will start the flow.

Avoid pressing the tip of the instrument against the wall of the bowel, or directing the current against it as either is irritating.

3. Do not withdraw the instrument like an ordinary tip lest the mucous membrane catch in the fenestra, but withdraw it gently and while doing so rotate it slightly first in one direction and then in the other, this prevents the above accident and frees the tube without pain or injury, if it has already occurred.

(*To be continued.*)

Ringworm (Tinea Circinata)—

℞	Hydrargyri ammoniati	
	Sulphuris loti, āā	ʒi
	Vaselini	℥i

M. Sig.—Apply locally to the affected parts night and morning.—*Jour. A. M. A.*

Warts (Verrucae)—

℞	Acidi salicylici,	
	Alcohol, āā	ʒi
	Aetheris sulphurici	ʒii
	Collodii, q.s. ad	℥i

M. Sig.—To be painted upon the warts.

It is the consensus of opinion that some preparation containing salicylic acid is the best for removal of warts.

℞	Paraformi	gr. xiv
	Collodii, q.s. ad	℥i

M. Sig.—Apply locally to the warts night and morning.

Dr. Mense, in *The Medical Review*, recommends paraform on account of its penetrative power. It is a white crystalline solid with the formula $HCOH_2$ and is sometimes recommended as an antiseptic in doses of .5 to 1 gm. in diseases of the of the intestinal tract.—*Jour. A. M. A.*

THE DIAGNOSTIC IMPORTANCE OF THE MENINGOCOCCUS INTRACELLULARIS.

By Louis Fischer, M.D.

WEICHSELBAUM, in 1897, and, more recently, Jaeger, of Stuttgart, describe a microörganism which they always found in the meningeal exudation in the course of an epidemic of cerebrospinal meningitis.

The characteristics of this germ are that it appears in either a diplococcus or tetrad form. It is always found within the pus cells. The germ has proven to be very pathogenic, and could always be found post mortem as well as *intra vitam*.

Heubner (*Deutsch. Med. Wochenschrift*, July 2, 1896, No. 27) describes in detail the case of a child, 1½ years of age, in which the diagnosis was made by a lumbar puncture, and in the spinal fluid examined the meningococcus was found.

Dr. Finkelstein made an elaborate report of his researches with this microörganism, which was published *in extenso* in the *Charité Annalen*, 1895, xx p. 297.

When a lumbar puncture is made, according to Quincke, in cerebrospinal meningitis, we obtain a turbid, sometimes a purulent fluid which contains pus corpuscles, and within the latter are found the characteristic meningococcis. In order to demonstrate whether this microörganism is the true etiological factor, Heubner reversed the lumbar puncture method of aspirating fluid, and in its stead injected a pure culture of this germ into the dura between two spinous processes of the lumbar vertebrae, with the aid of a hypodermic syringe. This above method was given in preference, because the series of experiments made by Weichselbaum, wherein the latter performed trepanation of the skull and then injected pure cultures of the meningococcus, all proved unsuccessful.

At first Heubner injected rabbits and guinea pigs, but neither reacted; all remained well. Later those animals were used which are easily attacked with meningitis, e.g., dogs and goats. When the latter were used the experiments were all successful. In one instance, an animal injected with an attenuated culture recovered from an attack of fever with positive symptoms of meningitis. Upon being injected another time, the animal immediately showed severe illness and died in one day.

The post mortem showed meningitis along the whole of the spinal column, extending to the cerebellum, and acute hydrocephalus. In the hydrocephalic fluid he found pus cells containing tetracocci. So it was easily demonstrated that the same microörganism could reproduce the disease in an animal in which the pathological manifestations were identical with those found in the human being. According to the experiments of Jaeger and Weichselbaum the meningococcus is far less virulent than many cocci causing inflammation, and particularly, less virulent than the pneumococcus.

When a rabbit was injected with pleuritic effusion into the spinal canal, it died showing extensive hyperemia of the spinal cord, whereas the injection of cultures of meningococci did not prove fatal.

Another important point proving that the toxin of this meningococcus is less virulent, is shown by the frequent recoveries of cases of meningitis, owing their origin to the meningococcus with distinct opisthotonus and spasm of the muscles of the neck, and the marked fatality of cases of meningitis caused by other microörganisms. So, for example, we know that meningitis resulting from an otitis media always terminates fatally. Another variety is the sporadic meningitis of a purulent type, which usually terminates fatally, whether caused by the streptococcus-pneumococcus, the bacterium coli, or the influenza bacillus.

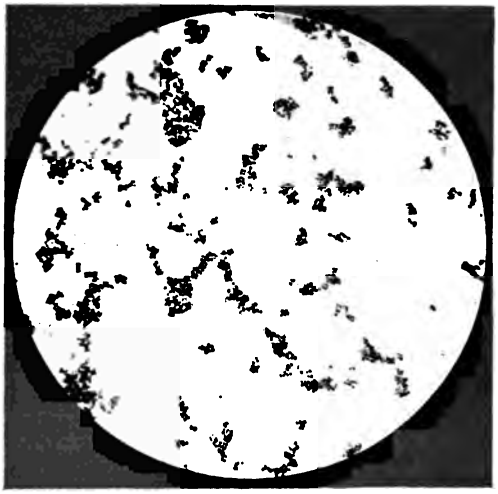
This is not so with epidemic cerebrospinal meningitis. Many children recover even though the disease assumes a purulent character.

Jaeger reports an epidemic of cerebrospinal meningitis in Wurtemberg in 1893-1894, wherein thirty-five cases were treated and of these twenty-one recovered, leaving fourteen deaths, a mortality of about 40 per cent. Thus this clinical fact proves that a germ of a much less virulent type is the causative factor in epidemic meningitis of a purulent type than the germ causing the sporadic type of the disease.

Heubner studied five cases carefully, which he published, in which the one constant symptom of epidemic cerebrospinal meningitis *neck spasm* was always present. This symptom "spasm of the muscles of the neck" disappears only during convalescence.

In tubercular meningitis we do not have the symptom so characteristic as in the epidemic type of the disease.

An important point to remember in differentiating the epidemic form from the sporadic form is that the duration of the epidemic is always very lengthy, lasting weeks and frequently months. The sporadic type ends fatally in about four to five days.



Heubner lays great stress on the value of the lumbar puncture in the epidemic form of cerebrospinal meningitis. Heretofore it has been customary to differentiate the purulent form of meningitis from the tubercular meningitis by the character of the fluid aspirated by the lumbar puncture.

The bacteriological examination of the purulent fluid aspirated will readily show which form of meningitis we are dealing with, whether the epidemic form or the sporadic cerobrospinal meningitis.

The staining of the meningococcus in the cells of the fluid from the lumbar puncture is easily made by making a smear from the pure culture and staining it with Ziehl's solution.

The best method of obtaining a pure culture was found by inoculating the surface of agar with fluid aspirated by the lumbar puncture. It grows very rapidly, yielding a yellowish growth, shining, and having a slime-like character.

Blood serum was also used and gave very good results. The specimen is a pure culture given to me by Prof. Adolf Baginsky, of Berlin, and was made from a child, a patient at the Kaiser and Kaiserin Friedrich Children's Hospital, suffering with meningitis cerebrospinalis epidemica.

Since Quincke brought this procedure of lumbar puncture before the Tenth Congress of Internal Medicine the value of paracentesis of the spinal canal for the relief of intracranial pressure in meningitis has found many advocates. The interesting paper by George Jacoby, another by Caillé, A. Jacobi's reference to the same operation in his "Therapeutics in Infancy and Childhood" and Dr. J. Madison Taylor's paper before the Pennsylvania State Medical Society in 1898, are among the contributions to the clinical value of this procedure. The classical paper, read by Dr. W. T. Councilman before the Johns Hopkins Medical Society, gives a resumé of a series of thirty-five post mortem investigations.

Let us quote Councilman's own words. He says: "Too much cannot be said of the importance of spinal puncture in making the diagnosis of the disease. As a diagnostic measure it ranks in value with the examination of the sputum. A microscopical and bacteriological examination of the fluid should always be obtained in order to ascertain what organism is present. In no other way would it be possible to arrive at certainty with regard to the nature of the sporadic cases. We believe that all infections of the meninges other than that by the diplococcus cellularis are fatal, but this can only be determined by microscopic and bacteriological examination of the exudation obtained during life by spinal puncture. If tubercle bacilli, pneumococci, or streptococci are found with the evidence of meningitis in a case which recovers it would settle the point. Clinical evidence without spinal puncture will not.

Editorials have appeared in PEDIATRICS, in the *Medical Review*, and various other medical journals. Joseph Collins, writing on this subject, says: "Those who have tapped the lumbar canal and removed fluid with the expectation of causing a decided amelioration in the symptoms or cure, have been disappointed without exception." Still, he says further, that the therapeutic worth in meningitis serosa is considerable, and in those forms of meningitis which are necessarily fatal it is of service, as suggested by Heubner, to moderate the headache, lessen the convulsions, and make the patient more comfortable.

My own experience has been rather favorable from both a diagnostic and therapeutic standpoint; thus, tapping the spinal canal for diagnostic means has not only invariably aided me in supporting my clinical diagnosis, but, in some instances, has given temporary if not permanent relief. A case of this kind occurred in the practice of Dr. L. Harris, of this city, in an infant nursling suffering with epidemic cerebrospinal meningitis; the characteristic neck spasm was constantly present, and, in consultation with Dr. Harris, we decided to tap the spinal canal to see what benefit would result from the same. Accordingly, paracentesis of the spinal canal was performed with aseptic precautions, and I was later informed by the attending physician that the child's spasm and general condition was greatly improved soon after this procedure. As to the final outcome of this case I have not heard, the patient being lost sight of. In this case the turbid fluid withdrawn showed the characteristic diplococcus, and thereupon I gave a good prognosis.

Another case equally instructive, from both its clinical and bacteriological standpoint, occurred in the prace of Dr. M. Mandelstamm, of this city, with whom I had the honor of seeing the case. The diagnosis of cerebrospinal meningitis was made, and I was pleased to hear, when I met the physician several weeks later, that the child recovered.

Dr. J. Madison Taylor reported three cases, showing evidence of increased cerebrospinal pressure, in which the lumbar puncture afforded distinct relief. One of the patients was deaf, dumb, and blind, with retraction of the head, a hydrocephalic cry, and athetosis. A puncture was made twice, athetoid movements diminished, the cry ceased, hearing and sight were improved. In a second case there had been convulsions, with bulging fontanels and blindness. The puncture caused no pain, the child, in fact, falling asleep during the operation. In a third case death resulted from exhaustion although the circumference of the head was reduced in size and convulsions lessened in severity.

If, according to J. Madison Taylor, relief was experienced in tapping the spinal canal, and the size of the head was diminished in circumference owing to a lessening of the intracranial pressure, and, most important of all, if the convulsions reported in his second case ceased, then we are certainly justified in advocating the paracentesis, not only for its diagnostic value but as a therapeutic measure.

65 East Ninetieth street.

Laxative for Children—

℞	Pulveris rhei	gr. xxiv
	Sodii bicarbonatis	ʒi
	Pulveris ipecacuanhæ	gr. iv
	Syr. simplicis, q. s. ad	℥iv

M. Sig.—One teaspoonful every three hours until the bowels move.

For a child of six years or older.—*Jour. A. M. A.*

Poison from Rhus Toxicodendron (Poison Vine)—

℞	Sodii sulphitis	ʒi
	Glycerini	℥ss
	Aquæ camphoræ, q. s. ad	℥ii

M. Ft. lotio. Sig.—Apply locally to the affected part by means of sterilized gauze.—*Jour. A. M. A.*

New Children's Hospital.—Germantown dedicated a new Children's Hospital September 3d. The building accomodates 25 patients, but this capacity will soon be doubled. The hospital is the outcome of the suggestion of a six-year-old girl who, a few days before her death, asked that seventy-one cents she had saved be used to start a hospital for children.—*Med. News.*

EDITORIAL COMMENTS

Researches on the Thymus Gland

M. Katz publishes (*LeProgrès Médical*, June 23, 1900,) some researches on the thymus gland, undertaken at the Hôpital des Enfants Malades at the request of M. Bourneville. The sixty-one autopsies include cases coming from different wards of the hospital and dying of various diseases. The youngest case was one month old and the oldest thirteen years, forty-one being under two years. In every one of the sixty-one cases tabulated the thymus was present. This the author regards as important, as Bourneville, in 1898, showed that in autopsies on twenty-eight infants of slight or no mental development (backward children, idiots, imbeciles, and epileptics) the thymus was found in three cases only. Katz's sixty-one cases were apparently of normal mental development. In most of the cases the gland was reddish-gray. In seven it was dark-red. One case showed minute areas of a deep red color both on the surface and interiorly. All the congested glands came from patients that died of diphtheria. The extreme variability in the weight of the organ is striking. It does not seem to bear that simple relation to the age of the individual which authorities have maintained. According to the latter, the thymus appears about the second month of intrauterine life and increases progressively in size and weight until the second year, from which time on it gradually atrophies. In Katz's series thc average of twenty cases from one to five months old showed the weight of the thymus to be 11 grams; from five months to two years it was 6 grams (twenty-five cases); from two years to thirteen years it was 8 grams (eighteen cases. From these observations it seems that the weight of this gland is very variable, so that it cannot be said exactly when the maximum is attained. As most of his cases were atrophic subjects, he thinks that it would be unfair to draw any conclusion as to the relation existing normally between the weight of the gland and the weight of the subject. However, he was struck by the constant relation between the weight of the gland and certain infectious diseases. Among his sixty-one cases there were thirteen of diphtheria. In all, whatever their weight or age, the thymus weighed considerably more than the average. T.

Sleeping Cars and Infectious Diseases.

During the past summer the daily papers have been more or less interested in the discussion of this subject. If the public can be awakend to the fact that there is a real danger in sleeping car-berths as at present constructed much good will have been accomplished. No one who has allowed his child to sleep in a berth of a modern sleeping car can say with any degree of certainty that it has not been exposed to an infectious disease. We recently saw a patient with virulent diphtheria who had spent the previous night in a sleeping car. That he infected the berth he occupied may be assumed. The modern sleeping car is so elaborately furnished that it would be absolutely impossible to thoroughly disinfect it even if the attempt should be made to do so. The necessity of keeping the bedding in an air tight compartment to keep it free from dust takes away the chance of partial disinfection that fresh air and sunlight would give. It would seem that at least mattresses and pillows might be covered with rubber cloth capable of being washed, and that washable cotton or linen curtains might be substituted for the heavy silk or worsted hangings now used. Rubber matting could be substituted for carpets. Blankets could be sterilized by steam or formaldehyd. Each car could be washed out at the end of a trip, and then fumigated with formaldehyd and its furnishings laundered or steamed. While these measures are not ideal they seem practicable and would certainly render the danger of contracting contagious disease much less than it is at present. T.

The Academy Library Again

Under Correspondence in this issue of PEDIATRICS will be found a letter from Dr. Alfred Meyer on the above subject, replying to an editorial in the last issue of this journal. It is far from the purpose of PEDIATRICS to make unjust or unduly severe criticisms in any matter whatever. We therefore take pleasure in publishing Dr. Meyer's letter exactly as written, and without further comment shall leave our readers to determine how fully he has covered the ground of our previous observations. B.

Corporal Punishment in Schools.—The question of corporal punishment in schools has been much discussed lately in Germany and Switzerland, and the Canton Berne has come to a decision in the matter. *The Ethical World* considers the new law a compromise between the flagellants and anti-flagellants. It prescribes the use of the cane for "grave faults" such as indicate moral perversion; repeated lying is given as an instance, and it is expressly forbidden to punish for want of application. Girls are not to be punished physically at all.—*Med. Record.*

CORRESPONDENCE.

NEW YORK, October 5, 1900.

To the Editor of PEDIATRICS.

SIR.—In the last issue of PEDIATRICS you have made some editorial comments upon the management of the Library of the New York Academy of Medicine, which, in part, are unduly severe and in part unjust. Only a very few will regard as evidence of illiberal or "obstructive" management the fact that only members of the Academy are permitted to take books to their homes. On the contrary this restriction will appear just and wise and not unduly conservative. The interests of non-members are, indeed, very generously provided for, far more generously than at the Library of the Bar Association which you hold up as a model. Anybody, resident or non-resident, may be introduced at the Academy and have full use of the reading rooms and the books upon the shelves. Indeed, during the current year a physician gave as his reason for resigning his membership his unwillingness to pay $20 a year for what he could get for nothing.

As to the methods of the other professional library, whose example you have urged us to follow, it is true that the library is open all night and at all times, but only to members. It is a rare thing for an outsider to be admitted (whether a member of the bar or not) to the privileges of the library, and then only when accompanied by a member—under "police surveillance" as it were. In the light of these facts surely there can be no question as to the comparative liberality of the two professional libraries.

With reference to keeping the Academy Library open until 11 p.m. it may not be known to you that this was done tentatively some years ago, but the supply of readers after 10 o'clock did not seem to justify this policy. Extra expense had nothing whatever to do with the discontinuance of the experiment, the librarian having given the extra time gratuitously. On the Sunday opening question there will naturally be room for a difference of opinion, but in all justice to the management it should have been stated that a vote of the members on this subject was taken some years ago by means of a circular letter, and the proposition was negative.

Your statement that the committee in charge are "naturally indifferent whether the library is opened or closed" is entirely gratuitous and without a particle of evidence to warrant it. As a member of the Library Committee I feel that it requires nothing more than a courteous denial.

I am, Mr. Editor,
Yours most truly,
ALFRED MEYER.

801 Madison avenue.

Intestinal Meteorism in Infants.—

℞	Sodii sulpho-carbolat.....	0.25-0.50 cgm.
	Syr. aurantii cort. amar..........	5 gm.
	Aq. menth. pip.................	25 "

M. S. Take a teaspoonful three times a day for two consecutive days.—FREYBERGER, *Med. Record.*

Trinity Diet-Kitchen for Infants.—Dr. George T. Palmer, medical director of the Trinity Diet-Kitchen for Infants, has just issued a report, showing the work of that institution during the last two months. He reports almost 700 babies cared for and only one death. The low death-rate is attributed by Dr. Palmer to the high grade of milk and foods given out, to the purity of the spring-water supplied, and to the ice that has been given to all to preserve the food.

SOCIETY REPORTS

AMERICAN MEDICAL ASSOCIATION—SECTION ON DISEASES OF CHILDREN.

ANNUAL MEETING, ATLANTIC CITY, N.J., JUNE 5 TO 8, 1900.

Third Day, June 7, 1900—Morning Session.

Dr. CARL BECK, of New York, read a paper entitled, **The Diagnosis and Treatment of Encephalocele.** The treatment of this condition varies, according to the type of encephalocele present, meningocele, hydrencephalocele or encephalocele proper. The speaker reported three cases which illustrate the value of Roentgen rays in the diagnosis of encephalocele. The first patient was a boy aged five years with a fluctuating spherical non-pulsating tumor of the size of an orange, projecting from the naso-frontal region and sinking downward towards the alae nasi. The mother sustained fractures of three ribs and of the olecranon in a fall from the fourth story eight months before confinement. The walls of the tumor were thin, the skin over it appeared normal; the tumor contracted when the child cried, and the contents could be pressed entirely into the skull. No pulsation of the brain could be detected. Meningocele was thought of, but the Roentgen rays showed that a solid mass was present in the tumor, and that it was probably an encephalocele. The author showed a skiagraph of the tumor. The nasal bone was shifted downward, so that a space was left between it and the frontal bone. Excision was performed without anesthesia, and the contents of the tumor found to be brain substance. The child made a perfect recovery.

The second patient was a boy aged seven weeks with an ovoid tumor the size of which exceeded that of the head; the growth projected from above the foramen magnum. The walls were thick at the base, but thin and translucent at the apex. The apex contained fluid which could not be pushed into the cranium. The Roentgen rays showed that there was a pedicle of moderate size, not in entire connection with the brain. The translucent portion became congested and the child's temperature rose. This meant that the hydroencephalocele threatened to rupture. The tumor was therefore excised. The patient died of purulent meningitis on the fourth day. He was microcephalic, and while the author thought that an earlier operation might have saved his life, the desirability of such a result could be questioned.

The third patient was a boy aged three months who presented at birth a globular pulsating tumor which sprang by a broad base from the superior angle of the occiput. The treatment consist of iodoform gauze-collodion dressing and pressure. The tumor disappeared in the course of a year.

The prognosis of encephalocele has become more promising under the auspices of thorough asepsis and Roetgen ray diagnosis.

2. Dr. E. Stuver of Fort Collins, Colo., read a paper entitled: **Symmetrical Development; or Does Our Present School System Develop the Highest Powers of the Child?** He emphasized the principle that physical, intellectual and moral powers should be developed simultaneously and symmetrically. The instruction must be adapted to the ever-varying needs of the growing child. Educational standards among teachers must be raised and they must receive better pay. More original work and less routine in teaching is needed. Too many studies should not be pursued at the same time, but a stronger grasp of the fundamental principles must be secured. The study of nature in the open air should be substituted for dry text-books. More time and attention should be given to manual training. All harsh and dangerous punishments should be banished as unhygienic.

3, Dr. J. H. Bartlett, of Philadelphia, read a paper entitled, **School Break-Downs.** *The Ladies' Home Journal* recently published a somewhat sensational article which presented an indictment of our school system. The writer claims that it is not the schoolmaster who must be held responsible tor school break-downs but the family physician. The nervous and physical break-downs depend upon factors existing at home as much if not more than in school. "The years in which we have over-study are precisely the years of develoment, especially those covering the second dentition and puberty. The root of the matter would then seen to lie in the developmental processes and not in over-study" (Yale). Faulty diet and hygiene, and lack of exercise and sleep are the principal causes of break-downs. The school strain thus has a host of allies. The strain of examinations, the pressure of unnatural stimuli, appear with misplaced emphasis in school life. A general recognition of these principles and an intelligent study of the subject of adolescence rather than a revolution in our school practices present the practical solution of school break-downs.

4. Dr. **Louis J. Lautenbach**, of Philadelphia, read a paper entitled, **Care of the Ear in School Children.** He emphasized the usefulness of good hearing in any kind of mental work. Many supposedly stupid children are really simply children with impaired hearing. Statistics show that a considerable percentage of school children have some defect in hearing and vision. Dr. Allport has devised a system in which the principal and teachers of a school examine the functions of the eyes and ears of the pupils. The speaker exhibited the blanks which are used for this purpose in Chicago and other cities. The value of these examinations is that they call attention to the existence of defects and thus prevent neglect. A frequent cause of ear trouble in children is lesions in the nose and throat. The practice of scrubbing the ears and nasal douches are harmful rather than useful. In children under six years of age the eustachian tube is so wide that liquid can get into the middle ear when swallowed. Over 50 per cent of all cases of ear disease occur in children under ten years of age. The nose and throat of school children must be examined, and the conditions found must be treated in order to prevent ear complications.

DISCUSSION.

Dr. **C. F. Wahrer**, of Fort Madison, Iowa, spoke of the overcrowding of the school curriculum with subjects that are not useful but only serve to overwork the child. Prodigies should not be encouraged, for it must be remembered that overwork interferes with growth and development. One of the frequent consequences of school strain is chorea. All children must be examined by a physician before admission, and medical supervision should be exercised in all public schools. The speaker emphasized the great responsibility of the medical school inspector. Under the present system intellectual giants who are physical dwarfs are the products of the school.

Dr. E. E. GRAHAM, of Philadelphia, said that diet, exercise and sleep are of course, important, but he does not think that developmental processes are the causes of break-downs in school children. These processes are normal, physiologic. It is the straining or overwork of the functions, not their development, which must be blamed. It is the strain to which the child is subjected, e.g., in weekly competitions that must be regarded as the source of break-downs, not the process of education or development. We know what a severe strain annual examinations are in later life, and yet children of six or eight years are put through various tests and graded at least twice a year. The school hours of young children are too long and their vacations too short. It is a serious question whether such outside influences as diet, exercise, sleep, etc., are secondary in importance, as he believes, or whether they are the primary causes of school break-down.

Dr. SULLIVAN, of Nebraska, said that it had been impressed upon us from year to year that the school system is faulty. It is difficult to remedy the state of affairs, but three things must be done: (1) The qualifications of teachers must be increased; let them study human nature a little more and let them realize that one boy can do in one hour what another cannot do in half a day. Examinations and standards of requirements are too rigid, because they apply equally to all pupils without reference to their individual capacity. (2) More latitude must be allowed to the teacher's judgment. (3) There is too much politics in our schools. Physicians who try to correct these evils are usually accused of self-interest. So far as quantity of school work is concerned let us eliminate the useless and give the child an opportunity to study nature. In conclusion, the speaker urged that the increase of the interest of medical men in school affairs is the only way towards the solution of these problems.

Dr. Ivin, of Pittsburg, Pa., said that in his mind this question resolves itself into two principles: (1) The classification of the pupils according to their physical and mental capacity. The keynote of all work should be physiologic exercise, both mental and physical. Teachers, too, are overworked under the present system.

Dr. Allport, of Chicago, said that he was glad that Dr. Lautenbach's paper brought out the importance of systematic examinations of the eye, ear, nose and throat in school children. He has been particularly interested in the subject. Teachers often doubt their ability to make the required tests properly, as they are not physicians. They are not expected, of course, to become diagnosticians, but simply to "separate wheat from chaff." The chart which the speaker showed simplifies the examination so that it can be made by any person of sufficient intelligence. A series of questions are printed on this card and they are such that any teacher can ask and any boy can answer: (1) Does the child suffer from headaches or eyeaches? (2) Do his eyes grow tired habitually after study? (3) Can he read the "20 line" of test types at the normal distance, 20 feet? The principal should not make these examinations, for the teacher, who is better acquainted with the individual children, can answer these questions more easily and more correctly. (4) Is the child probably cross-eyed? The answer to these four questions will disclose 90 per cent of all eye troubles. If anything be deficient the teacher fills out a card and notifies the parents; the same plan is pursued for the ear, nose and throat. The tests are extremely simple, and they do not compel the parents to do anything; they are absolutely impersonal, unobjectionable, cost almost nothing except for printing. The speaker does not know a single instance where a Board of Education has refused to adopt this system if it was intelligently brought to the attention of the members. A smaller card with printed instructions is given each teacher. These tests can be made in small towns, in fact, they are made in many places now. It is taught in many schools in this country and abroad, and has recently been introduced in India.

It will be realized what great advantages will result from the introduction of this system in every city in the United States when we remember that in 50 per cent of children some defect of eye or ear was found.

Dr. **Edwin Rosenthal**, of Philadelphia, said that a great deal of hysteria had been found in the school children of Philadelphia, and that defects of the eye and of the ear were also common among the pupils. He thinks that medical inspection must include the examination of the nervous system in order to call the attention of the parents to any existing nervous disorders.

Dr. C. F. **Wahrer**, in closing, said that instead of making the school curriculum more and more complicated, more attention should be given to the training of the mind. While popularization of education is a good thing, all kinds of subjects must not be included in the program of the school. They are not always suited to all students. Examinations, especially competitions for prizes, must be abolished, and the rivalry created by a system of tests and marks for proficiency must be discouraged.

5. Dr. **Frederick A. Packard**, of Philadelphia, read a paper entitled, **The Antecedents of Organic Heart Disease.** In childhood the occurrence of endocarditis or of myocardial changes giving rise to cardiac signs must be attributed to occurrence of infection. Under the heading infection should be considered not only such diseases as are accompanied by a classical symptomatology and therefore designated by a special name, but also the minor affections which are so frequent in childhood. The speaker has elsewhere shown that angina can readily be followed by endocarditis and other minor and frequent local lesions may be followed by valvular disease of the heart. Ordinary colds, gastro-enteric disorders, etc., may possibly give rise to heart complications if the germ is sufficiently virulent.

The author studied 75 histories of children with endocarditis, taking them in the order in which they were recorded in the books of the hospital, in order to ascertain the antecedent infection in each case. He also analyzed an equal number of control cases with the same infections who had no heart lesions.

TABLE OF CASES.

Disease.	Cases in Children with Heart Disease.	Cases in Control Set of Children.
Measles	24	43
Whooping-cough	19	37
The only disease in	1	..
Chorea	16	2
Scarlatina	11	7
The only disease in	3	..
Diphtheria	8	7
Pneumonia	6	4
Varicella	5	14
Mumps	4	1
Typhoid fever	4	4
Tonsillitis, repeated attacks	2	0
The only disease in	1	..
Meningitis, cerebrospinal	2	..
Meningitis	1 each	
Rubeola		
Gastro-enteritis		
Pleurisy		
Chronic bronchitis		
Acute nephritis		
Cholera infantum		
Osteo-arthritis		
Indefinite		

If the small series of control cases can be taken as a guide, measles, varicella, whooping-cough, and typhoid fever have little or no influence in the production of endocarditis. We must therefore attribute many of the cases of heart disease to the slight infections, such as coryza, various skin diseases, affections of the throat, nose, and gastro-intestinal tract. In conclusion the speaker emphasized the necessity of careful examination of the heart in slight infections.

6. Dr. A. Campbell White, of New York, demonstrated the **Therapeutic Application of Liquid Air**, and read a paper upon the value of this agent in medicine and surgery. He believes that liquid air will, some day, rival antitoxin in usefulness as a therapeutic agent. He demonstrated the remarkable physical properties of liquid air. In speaking of its physiological effects he said that it does not kill germs even after an exposure of over two hours; the vitality of the microorgan-

isms is only suspended and they return to life as soon as the effects of the liquid air have passed away. When applied to a part of the body liquid air produces a complete anemia, the limb losing all blood and all sensation. Soon, however, the circulation returns and the part is richer in blood than before. Thus, when the vitality of the germs is suspended the tissues have time to recover from the effects of their activity. The anesthesia lasts for some time after the circulation has returned, and it can be secured in a few minutes without any ill effects upon the part except a slight desquamation of the epithelium. Liquid air is therefore useful in small operations and where general anesthesia is for some reason contraindicated. In neuralgia is has also been found useful, the pain ceasing almost immediately, but in old persons ulceration of the skin takes place at the point of application. It is the best remedy he knows of in the local treatment of boils and carbuncles. The carbuncle is first sprayed with liquid air and an absorbent dressing is put on. When the circulation returns the pus is discharged from the openings in the carbuncle. The application may be repeated if necessary. The liquid air cautery has given good results in lupus, chronic ulcers, etc., as a stimulant to cicatrization. For quickly removing nævi without scars it is very good. Carcinoma has been treated with it successfully, even after other means, including operation, had failed. Dr. Fox showed a case at the Vanderbilt Clinic in which epithelioma was cured with but a small scar. In general and contagious diseases liquid air may be used as a general bath for the reduction of temperature. It is more simple to apply and more pleasant than water. Inhalations of liquid air may be used in phthisis and in other lung affections as well as in hay fever. The results of these cases are still speculative but probably they will be good.

ABSTRACTS

ADDISON'S DISEASE IN A CHILD; ACUTE ATTACK RESEMBLING PERITONITIS.

Netter and **Nattan-Labrier** (*Revue Médicale*, May 2, 1900, p. 135) report the case of a child aged thirteen years, who had been in good health until he was suddenly seized with vertigo, vomiting and diarrhea, On the following day he was in a state of absolute asthenia, and complained of violent pains at the level of the abdomen and of the loins. The facies, the pulse, the vomiting, and the fever seemed to indicate the presence of peritonitis; a slight pigmentation of the skin suggested Addison's disease, but the previous history was negative. The child died after three days and the autopsy revealed a tuberculosis of the suprarenal glands.

A CASE OF ACUTE TETANUS TREATED BY INTRACEREBRAL INJECTIONS OF ANTITOXIN, RECOVERY.

Frank Liddell (*Australasian Medical Gazette*, April 20, 1900) reports the case of a boy aged eight years who had received a punctured wound with a small rusty nail on the outer side of the left knee, and ten days later developed the symptoms of tetanus. He became rapidly worse, and on the third day after admission he received an intracranial injection of tetanus antitoxin. The technique used was as follows: The anterior half of the head having been shaved and the patient anesthetized, the skin was rendered aseptic and a small incision was made through the scalp down to the bone over the right frontal eminence, and after the slight resulting hemorrhage had been arrested the frontal bone was punctured with a small drill. With an ordinary antitoxin syringe holding 10 cc., five cubic centimeters of tetanus antitoxin were injected deeply into the substance of the brain.

The injection occupied exactly ten minutes. The operation was repeated over the left frontal eminence, and a similar quantity of serum injected. A further quantity of 10 ccm. of antitoxin was next injected subcutaneously into the flank. At the moment of the first incision, and while well under the influence of the anæsthetic, the patient had a severe spasm.

After History.—He passed a good night. The chloral hydrate was discontinued from the time of the operation. Next day, morning temperature normal, evening temperature 99° F. Spasms continued as before, but at longer intervals. For the three days succeeding the operation he was fed with milk, egg and brandy mixture through the nose.

December 30.—Feeding through the nose was discontinued, as he could swallow fairly well. 10 ccm. of antitoxin were injected subcutaneously into the thigh above the wound. The spasms gradually lessened in severity, being more marked at night than in the daytime.

February 5.—Spasms had ceased.

TRACHOMA.

J. C. HANCOCK, (*New York Lancet*, July 1900) in speaking of the treatment of granular lids says that in the first stage when the conjuctiva presents a more or less velvety appearance his plan is to scarify the entire surface lightly, making incisions parallel with the free border of the lids, and paying particular attention to the fold of transition where the infection is usually extensive. With squeezing-forceps the gelatinous material is then expressed and the incised surface briskly rubbed with pledgets of cotton wet with sublimate solution (1-500).

In the second stage the grattage operation, introduced into this country in 1891 by Maple and Weeks, is indicated. This consists of scarification as above, except that the incisions should extend more deeply into the tissues. A sublimate solution (1-500 is then rubbed into the incised surface with a harsh brush (a tooth-brush is usually employed). The brush removes much of the contents of the incised granules, as well as introduces the strong antiseptic. He always supplements the grattage operation at this stage with squeezing and rubbing the conjunctiva as in the first.

The after-treatment in both stages may generally be limited to a pressure bandage if signs of swelling of the lids be present; otherwise this is unnecessary. Every twenty-four hours for a week an application of sublimate solution (1-1000) should be made to the lids, the applicator being swept up to the cul-de-sac to break up adhesions. Every few days for a month bichlorid vaselin (1-5000) should be introduced into the conjunctival sac.

A SEVERE CASE OF MORPHINE POISONING IN AN INFANT TREATED WITH POTASSIUM PERMANGANATE, RECOVERY.

JOHN A. BARKER (*New York Lancet*, July 1900) reports a case of a child four days old that had been given one-fourth of a grain of morphine sulphate by mistake. The writer found the infant in a state of stupor, cyanotic, with cold skin, dilated and insensible pupils, slow stertorous breathing, and a pulse so feeble that it could not be counted. Two grains of permanganate were given hypodermically, heat applied and artificial respiration performed. A few minutes later the child was seized with violent convulsions, and though the phenomena of life were no longer perceptible another dose of permanganate was given. An enema of warm water was also administered and the Schultz method of respiration continued. After about five minutes breathing was noticed and cardiac pulsations returned. The child remained in coma for half an hour and another dose of permanganate was given. The child improved rapidly from that time on, and recovered completely.

A REMINDER OF THE CARE OF CHILDREN DURING THE SUMMER.

S. Henry Dessau (*Medical Record*, June 30, 1900) speaks of the general care of infants during the summer, and emphasizes the importance of proper feeding as well as of keeping the child cool. He says in regard to the latter subject:

"For this purpose the cool country air is best for those whose means can afford it, while for the masses, including the poor of large cities, other devices must be thought of—such as a liberal use of ice for sucking or eating, bathing in cold water several times in the day if need be, seeking the early morning air, a free ventilation of the sleeping apartments, especially during the night, doing as little cooking in small apartments as possible, using the lightest kind of clothing, in fact letting children imitate little Hottentots; taking short trips on the water to the seashore or crossing and recrossing the ferries, visiting the shady parts of the public parks during the heat of the day. All of these need not by any manner of means preclude a strict observance of domestic cleanliness, which produces at least a mental effect of apparent coolness and comfort, nor the general cleanliness of city streets and a free use of flushing, which not only in fact cools the air of the streets, but in addition insures a purer breathing-air freed from decomposing matter.

"Seeking the shade of trees is undoubtedly one of the best plans for obtaining cool air in Summer. Dr. Chapin has recently called attention to the fact that the foliage of trees has the property of reducing and regulating atmospheric temperature in their immediate vicinity."

THE TREATMENT OF SUPPURATIVE OTITIS MEDIA IN YOUNG CHILDREN.

George L. Richards (*Medical News*, May 19, 1900) outlines the method of treatment which he uses in suppurative otitis. If the suppuration has lasted some time and the discharge is very foul, and caries of the tympanic structures is already marked he syringes the ear thoroughly with warm sterile water or with a solution of 1 to 5000 bichloride of mercury until all debris had been removed. The canal is then carefully dried and the ear inspected. If there is much destruction of the tympanic membrane he applies peroxide of hydrogen on a cotton pledget (never dropped in) as long as there is any exudation of gas, and after again drying the parts, applies on a cotton pledget a saturated solution of boracic acid in from 40 to 90 per cent of alcohol, the percentage of the alcohol depending on the age of the child and the ability to bear the pain of the alcohol. In young children he seldom uses over 50 per cent alcohol. He next dusts the whole surface *lightly* with powdered boracic acid or some similarly acting powder; of late he has been using boric acid and acetanilid with good results, also at times aristol, acetanilid, or europhen combined with stearate of zinc. These are all drying powders, and he regards them as very useful, although some object to the use of powders at all. A powder can, however, be used with perfect safety in the ear if care is taken not to use too much, and the powder is free from lumps. Lastly, he lightly stops the ear with a small narrow wick of iodoform or other antiseptic gauze, taking care that the gauze reaches to the bottom of the canal.

If the process is more acute and the perforation small neither the peroxide of hydrogen, nor the boric-acid—alcohol, nor the powder is used; but simply as thorough cleansing as possible through an opening in the drum membrane large enough to ensure drainage, with the insertion of gauze-wicking or cotton pledgets frequently changed in the manner described. If there it the slightest doubt as to the opening being large enough, a free incision is made at the posterior inferior quadrant of the drum membrane. This will often be found advantageous even when drainage is apparently good.

The office treatment is now apparently ended, but the most important thing is yet to come, namely, the instruction of the mother or the attendant in the home treatment. This he regards as important as, if not more so than, his own and without it his endeavors are very likely to fail.

THE PREVENTION OF SCARLET FEVER.

FLOYD M. CRANDALL (*Medical News*, June 2, 1900) says that in few other diseases are preventive measures productive of such good results as in scarlet fever.

He discusses isolation, the early symptoms of the disease, and the dangers of infection during the period of desquamation. The disease is spread specially through the mild cases that are mistaken for German measles, roseola, or stomach rash. Every doubtful case should be isolated until the appearance or non-appearance of desquamation establishes its true character. He emphasizes the importance of school inspection in the prevention of contagious diseases and the value of special hospitals. The practitioner should never visit a case of scarlet fever without wearing a gown, which should be put on before entering the sick room and should be hung up in a bathroom or other suitable place upon leaving. Upon the termination of the case the gown should be thoroughly boiled.

It goes without saying that the hands and face should be disinfected after every visit to a scarlet fever patient. The same is true of the stethoscope, which should be used for all physical examinations of the chest. The tongue-depressor or any other instrument used about the throat should not be taken from the room. The doctor himself should not carry out the details of treatment farther than is strictly necessary. It is difficult for him to do so without danger of carrying the disease. It can only be avoided by more thorough disinfection than most doctors are willing to carry out.

General inunction of the body with lanolin or vaselin, with or without boric acid or ichthyol are useful in limiting the spread of the disease, especially after desquamation. During this stage the inunction may be preceded by a bath or sponging with water at the temperature of 90° F. The water may be plain or it may contain a small amount of salt or borax. The use of antiseptic soap is advocated by many practitioners, resorcin soap being perhaps the most commonly used.

INFANTILE NEPHRITIS.

Charles Douglas (*The Physician and Surgeon*, May, 1900) reviews the literature of the subject and emphasizes the rarity of nephritis in infancy, the cases reported, as a rule, being nephritis in childhood. The writer reports four cases of nephritis in infants that came under his observation in the summer of 1899, and lays stress upon diet in the treatment of these affections. When milk could not be digested he substituted beef tea in small amounts combined with a little rice starch, and if this could not be borne, a weak cream mixture. He found that when a nitrogenous diet excluding milk was adopted the cases did not do well, but when diluted cream and starch was given the diuretic properties of the milk were very beneficial and the edema and albuminuria disappeared. He used no drugs in these cases, and pleads for the more frequent examination of infantile urine in disease.

EPILEPSY, RICKETS, AND THE LYMPHATIC DIATHESIS.

A. P. Ohlmacher (*American Journal of Insanity*, April, 1900) gives the results of three years of study of the etiology of epilepsy. He found that the autopsies of epileptics showed that lymphatism was often associated with grand mal. In some of the subjects rickets was also found, and the writer concludes that rickets is probably an important factor in the etiology of idiopathic epilepsy. He quotes Gowers in support of this statement, and says that further investigation as to the essential nature of rickets and of the lymphatic diathesis will probably help to solve this question. The prevention of rickets, in the meanwhile, must be regarded more important than ever, for by preventing this disease we are also impeding the development of its attendant neuroses among which epilepsy takes first place.

FOREIGN PEDIATRIC JOURNALS.

Abstracts of all Original Articles Appearing in Foreign Journals Devoted to Pediatrics Under the Charge of George Alexander Saxe, M.D., New York.

REVUE MENSUELLE DES MALADIES DE L'ENFANCE, JULY 1900.

Cadet De Gassicourt. Obituary. A biographic notice of the noted French pediatrist, Cadet de Gassicourt, physician to the Trousseau Hopital, founder of the Revue Mensuelle des Maladies de l'Enfance. Born in Paris in 1826, died at Sevres, July 1900.

Concerning Nephritis in Nurslings.—By M. Goulkewitch. The writer studied the kidneys in 220 cadavers of children between the ages of two and nine months who had died from various diseases. He found nephritis in twenty-two cases. His conclusions are as follows: (1) Nephritis occurs in nurslings more frequently than is generally supposed. (2) The influence of heredity on the occurrence of nephritis merits investigation. (3) Modern pathology attributes a too great importance to pathogenic microörganisms and neglects the idiosyncrasy of the organism which favors infection.

The Symptoms of Early Hereditary Syphilis. A Review of a Paris Thesis by Mlle. A. Kalinine (*Contribution a l'etude des signes de la syphilis hereditaire precoce. These de Paris, 1900.*) The cutaneous manifestations of hereditary syphilis are very complex. It is very rare to see a truly congenital eruption. The order of frequency of the eruptions of early hereditary syphilis is: pemphigus neonatorum, erythematous syphilid (roseola), erythemato-papular syphilid, mucous patches, acneiform syphilid, desquamative erythematous syphilid, gumma, ulcer.

The signs on the part of the mucous membranes in hereditary syphilis of infants are as follows: coryza, fissures or erosions on the lips, and ulcerations or plaques on the oral mucosa. Coryza usually appears during the second or third week of life, sometimes later. The onset is sometimes acute, but usually it is insidious. The discharge is at first clear and serous but soon becomes purulent, the mucous membrane becomes swollen and covered with crusts, and there is interference with breathing as well as suckling. Respiration may be so impeded that the infant is in danger of suffocation. The duration of specific coryza is long and the skin around the nostrils and upper lip is irritated, fissures and crusts resulting. Sevestre has observed that the nostrils are drawn inward in this form of coryza, and considers this a characteristic sign of hereditary syphilis. The ulcerations are rare on the vault of the palate, more frequent on the tongue, the gums, and the soft palate. The mucous patches are almost always seen on the tongue, which is also sometimes the seat of marginal exfoliation.

The laryngeal manifestations of hereditary syphilis are rather frequent. The symptoms of this affection are the alteration of the voice, cough, sometimes in paroxysms, and interference with respiration. The process is usually insidious, but the physician should be on the lookout for sudden attacks of perichondritis or edema, which may threaten the child's life. The lesions are usually at the vestibule. In cases of perichondritis the whole epiglottis becomes swollen, or it may present a nodular enlargement at its free border, or especially on its lingual surface. Later these nodules may become ulcerated, and one finds one, two or three ulcers penetrating deeply into the epiglottis. These laryngeal affections of infancy are serious, even fatal, and they are especially grave on account of the sequelae which often remain after the process has subsided, e. g. cicatricial bands, stenosis, hypertrophy of the mucosa, sclerosis.

The lungs may be the seat of bronchopneumonic processes due to the syphilis. Three varieties of these are distinguished by Balzer. (1) The fresh bronchopneumonias with pulmonary congestion. (2) Bronchopneumonia disseminated in nodes (pseudolobular form) which may be compared to subacute bronchopneumonia. There is thickening of the perilobular connective tissue and of the pleura, as well as of the walls of the alveoli and bloodvessels and congestion of the vessels. (3) Bronchopneumonia with white hepatization, pseudolobular or in nodes, sometimes terminating in caseation. The lungs are gray, pink, salmon colored (Parrot). This last characteristic and the absence of lesions in the bronchial lymph-nodes are valuable differential signs.

The alterations in the liver are probably the most marked and the earliest lesions of hereditary syphilis. They may appear either during intrauterine life or at birth, or after several years. Numerous types are described by Gubler (1847) and by Hudelo. There may be interstitial hepatitis, or gummata, or both hepatitis and gummata. The hepatitis may be diffuse or localized. The aggregation of gummata may form gummatous tumors.

The spleen is often affected in hereditary syphilis of infants. It becomes hard, smooth, sometimes adherent to the neighboring organs, often it is simply hypertrophied. The lesions in the spleen coexist usually with those of the liver, and when the syphilis is cured the spleen diminishes somewhat in size and apparently returns to its normal state. The pancreas is rarely affected. In the intestines there are multiple indurations, circumscribed, varying in size, generally rounded in shape, and situated at the level of Peyer's patches or of the solitary glands. The mucous membrane over these swellings may be ulcerated. Peritonitis often occurs in infants with hereditary syphilis, but according to Sevestre, it is rather a complication than a symptom of the disease. It is usually local, but sometimes it may be general and accompanied by grave symptoms. The testicle is sometimes hypertrophied in hereditary syphilis, occasionally reaching the size of a pigeon's egg. As a rule the

The writer repeated the experiments of Letzerich and gave the results of investigations. He reports two cases of purpura in children. The blood of both patients was examined three times, namely, on the day of admission to the hospital, at the height of the morbid process, and at the end of convalescence. The blood was examined in the usual way and, in addition, dry specimens prepared with Biondi's stain or with 1 per cent alcoholic solution or methyl-violet, were studied for the presence of bacteria. In the first case bacilli were found at the first and second examination; in the second case no germs were found at any time. In the first two preparations from the first patient the bacilli were found to be present only in very small numbers. Cultures prepared by inoculating nutritive media with drops of blood from the patients during the initial stage and during the height of the process gave negative results in all cases. Inoculations into guinea pigs were also without results, and no germs were found in these animals after they had received several inoculations of the blood of the patients into the peritoneal cavity. The author admits that he was at a disadvantage, because he was not able to obtain rabbits for the purpose of inoculation, as these animals may be more susceptible to Werlhof's disease, and also that he used the blood of the patients instead of pure cultures of the bacillus, as Letzerich has done. Tizzoni and Giovannini, however, state that the bacillus of purpura is pathogenic in guinea pigs as well as in rabbits. As regards other changes in the blood, he observed that the color is slightly paler at times, and that the coagubility is somewhat diminished, while the red cells are slightly decreased, and that of the white cells somewhat increased. In conclusion, the writer expresses his doubts as to the occurrence of Letzerich's bacillus in the blood of purpuric patients in such quantities as Petrone and Letzerich have found them. As to the contagiousness of purpura, he believes that the question is by no means settled, for very few clinical facts have thus far been established in support of this theory. The writer's patients were admitted to the general children's ward and yet no other children became infected. Giacanelli's observation of three cases of purpura in rapid succession, two of them in the members of the same family, does not prove anything, for no germs were found in the blood of these patients.

4. **Astasia-Abasia Hysterica.**—By S. TIMASCHEFF. The author reports a case of incoördination in standing and walking in a hysterical child, aged 10 years. The treatment consisted in suggestion of power given in the waking state. The boy was given a galvanic current from a hand battery, and told that although the procedure would be painful he must bear it at all risks, for if he takes the electricity he will be able to get up and walk on the following day. The current was turned on, and as the switch was moved from one cell to another he exhibited more and more intense pain, until, when the button was pressed upon the wires of the empty cells of the battery, his agony apparently became intense. On the following morning at the appointed hour he got up and began to walk, at first unsteadily, but soon more and more normally until his coördination became perfect.

5. **The Etiology of Spasm of the Glottis.**—By D. G. SEMTCHENOK

(Kazan). The writer reports four cases of laryngospasm in children and gives statistics concerning 179 cases that had been under his observation. According to Elsasser and Kassowitz, laryngospasm arises from irritation of certain portions of the brain as the result of the congestion of the cranial bones and brain membranes. Of the writer's 179 cases with softening of the cranium only 32 had laryngeal spasm. The writer concludes that it is doubtful whether the occurrence of laryngospasm can be attributed to softening of the occipital bone. The number of rachitic children with laryngeal spasm is much smaller than that of children with rickets who have craniotabes, and laryngospasm does not always occur in severe rickets. He has observed laryngeal spasm most frequently in children whose diet was very faulty and who were irritated and excited by parents or nurses in play, so that the cry of joy of the infant sometimes would merge into an eclamptic seizure. It is more rational to explain the occurrence of laryngismus stridulus and of eclampsia by the presence of undigested food in the stomach or intestines.

6. **The Predisposition to Diphtheria and Preventive Inoculations of Serum.**—The writer gives the results of his investigations on the subject of the prevention of infection with diphtheria by means of the inoculation of antitoxin, and sums up his own experience and that of a number of other observers, whom he quotes, in the following conclusions: (1), Infection with diphtheria occurs even after the injection of large doses of antitoxin; (2), The number of cases is not diminished by the preventive inoculation, and the value of these injections is not great enough to warrant the subjection of the patients to the risks of the untoward effects of the antitoxin.

7. **A Case of Chicken-pox in a Boy aged 17 Years.**—By E. STOLKIND. The occurrence of chicken-pox in children over twelve years is very rare, and in addition this case presented the following peculiarities: The period of incubation was three days (a very rare occurrence); the patient had an attack of small-pox as an infant, and an attack of chicken-pox before the present one, when he was ten years old.

8. **A Case of Tetanus; Treated with Serum.**—By A. BJELOUSSOFF. The patient was a boy, aged 12 years. During the first six days after admission he was given chloral hydrate and warm baths, with little or no effect. During the next four days he received nine injections of antitetanic serum. He was discharged cured six days later.

9. **A Case of Lupus Treated wite Permanganate of Potassium.**—By A. BJELOUSSOFF. The patient was a girl, aged 10 years. The treatment consisted in the application of a carbolated oil compress followed in twenty-four hours by sprinkling with finely powdered permanganate of potassium.

10. **A Case of Erythema Nodosum in a Girl aged 2 Years.**—By A. KISSEL. This case was peculiar because it was accompanied by marked rise of temperature and because, in addition to the nodes on the lower extremities, there were swellings on the upper extremities and on the ears. The course of the disease reminded one very much of an infectious process.

11. **A Case of well-marked Osteomalacia and Rickets in a Girl aged 2 Years.—By A. Kissel.** The child had been nursed at the breast, and showed evidences of rickets at an early age. The bones of the arm could be bent with very little effort. There was no craniotabes. The child's mother had rickets in infancy. The author says that it is difficult to deny the influence of hereditary when one meets such cases.

KINDERARZT, JULY, 1900.

ORIGINAL REPORTS OF THE PROCEEDINGS OF THE EIGHTEENTH CONGRESS FOR INTERNAL MEDICINE IN WIESBADEN, APRIL 18 TO 21, 1900. BY DR. SONNENBERGER (concluded). The papers read at this congress that pertain to diseases of children were as follows:

1. **Contributions to the Etiology and Pathogenesis of Acute Digestive Disturbances in Nurslings, Particularly Cholera Nostras.** By Dr. SONNENBERGER. The acute gastrointestinal disturbances in infancy are either bacterial or purely chemical (toxic) in origin. The term milk intoxication is used to designate the latter group of cases. They are due to the fact that milk is not only a secretion but also a medium of excretion, and therefore poisons that are taken up by the system may find an exit in the milk. In the majority of the fodders ordinarily given to cows there are vegetable alkaloids, glucosides and similar more or less poisonous substances, These get into the milk the more readily because the herbivora tolerate much larger quantities of such poisons than the carnivora. The prophylaxis of intestinal intoxication therefore consists in the removal or exclusion of all poisons and all poison-producers from the food. Destruction of the alkaloids and other poisons in milk is not possible by sterilization, for these substances are very resistant to high temperatures. The treatment of milk intoxications is very similar to that of the bacterial infections, and consists chiefly in the removal of the poisonous substances from the intestines, or the dilution thereof, or the conversion of them by chemical means into harmless compounds. Diet, i.e. the withdrawal of milk and the temporary substitution of other forms of food constitutes an important accessory measure and in addition symptomatic treatment of the affection must be applied, e.g., the lack of water in the system, the exhaustion, the collapse, etc.

2. **New Experiments in Serum Therapy.** By Dr. WASSERMANN. After the discovery of diphtheria antitoxin by Behring many attempts have been made to prepare serums against other infectious diseases, but in vain· Ehrlich has shown that two distinct elements must be present in order that a serum shall act as curative agent in a given infection, namely, the serum of an immunized animal, and a substance in the normal organism. Wassserman showed that in the attempts at serum therapy that have been made heretofore only one of these substances, that which is contained in the immunized animals was introduced into the system of the patient, while the other was neglected· He infected animals with virulent cultures of typhoid bacilli, and then injected into their veins, not only serum of immune animals, but also that of perfectly normal healthy animals. The results improved from that time on, and while all the animals that were treated with immunizing serum alone succumbed to the typhoid infection, all those that had been treated according to Wassermann's method recovered. His investigations open new avenues for serum therapy.

(In the discussion his statements were fully confirmed by Ehrlich).

PEDIATRICS

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VOL. X. NOVEMBER 1st, 1900. No. 9

ORIGINAL ARTICLES

ARTIFICIAL ALIMENTATION.

REPORT TO THE CHILDREN'S SECTION OF THE THIRTEENTH INTERNATIONAL MEDICAL CONGRESS, 1900.

By A. JACOBI, M.D., LL.D., Professor of Diseases of Children in Columbia University, New York.

WHEN, twenty-five 'years ago, I wrote on "Infant Hygiene" in the first volume of Gerhardt's "Handbuch der Kinderkrankheiten," I quoted 300 books and essays published on that subject. To-day there are probably 3,000. The majority of them are journal articles or small pamphlets containing the results of individual researches on the chemical composition of woman's and of cow's milk, or of one or more of its constituents. Some of them are accompanied by more or less dictatorial precepts referring to artificial feeding of the infant; these precepts do not, in their majority, claim to be founded on experience, but only that they are "scientific," and that for that reason the healthy baby is bound to thrive and the sick baby to recover on them, and to kindly overlook the fact that chemistry is, after all, not physiology and a living infant's stomach no test-tube.

Other books or pamphlets are written to order in the service and in the interest of manufacturers of proprietary foods. It is to be regretted that honest laboratory workers and clinicians, particularly in Europe, should be found willing to spend their time and efforts on any of these products and that now and then even medical journals pay them earnest attention.

Some of those prescriptions are followed by a dessert of priority claims, replies, and counter-replies, so that those of us who work in the nursery and hospital and sick chamber are not always fire-proof against suspecting that class of *soi-disant* scientific productions which exhibit a caviling spirit characteristic of ambitious mediocrity. There is no Malthus yet to strangle literary progeny when in its embryonal stage. That is a pity. I share the regret I believe I saw expressed lately, that there is the same possibility of harm done by indiscriminate literary production that may be attended by universal suffrage, and the further regret that hygiene and medicine appear to be relegated by some of us to the dead walls of a laboratory only.

As far as I am concerned I shall at once declare my point of view. Science of man is not tied down to chemical and mathematical formulæ or to a microscopical observation and a stained bacterium, with all their accurate and inaccurate results; it thrives as well on exact observations of facts connected with the living organism, particularly when they are repeated a hundred and a thousand fold.

To give a report of everything that has been done for infant hygiene and for the subject of sterilization as a part of it during the last dozen years or more, I considered rather superfluous after studying the most modern literature, and particularly three books—those of Monti, of Marfan, and the new edition of Biedert, which are mines of information to which nobody will turn without reward. What I shall say, therefore, is either critical or the result of my experience, based upon careful observation and honest sympathy with the living and dying infant. If, in the main, some of it agrees with what, after a practical experience of twenty years, I wrote twenty-five years ago, the accumulated evidence should encourage and direct further observations. My plea may not always agree with accepted theories or some of the existing analyses; but it frequently happens that theories have to be modified after the facts are established.

Substitutes for mother's milk were made in accordance with the results of chemical analyses of woman's and of cow's milk. What is mother's milk? Is that known, or is the milk of one mother, or of many mothers, identical? How is it that a baby will thrive on the milk of one woman and not on that of the other? The mildest way in which Monti puts the results of what we know is this, that the constituents of woman's milk are *more or less* constant, and it is "*only some* that vary." But the facts are worse. The analyses of woman's milk are contradictory, no two are alike. The percentage of albumin varies least, that of sugar and fat considerably. A woman's milk will change during every minute's nursing, from morning to night, it is changed by food, state of health, menstruation, lactation—and *still the baby thrives* in spite of all these changes.

Thus there is no sameness in human milk and for that reason no possibility of arranging a perfect and uniform substitute for every kind of it.

The differences between the casein of woman's and of cow's milk have been studied extensively, since Hammarsten, who first wrote thirty years ago, but to this moment it is not clear, whether the albuminoid which is found (more in the woman than in the cow) beside casein, is coordinate to it, or derived from it.

According to E. Pfeiffer casein is the only albuminoid in milk. Whatever else is found, is a product of its disintegration; there are no other nitrogenous materials ("extractive substances") but it is admitted that nitrogen varies considerably in amount.

On the other hand in Immanuel Munk's opinion (Virch. Arch. Vol. 134) nitrogen plays a different role altogether. In his researches referring to the question how much nitrogen there is in albumin and how much in extractive substances, he comes to the following conclusions: Total nitrogenous substances in cow's milk 15,7 per cent, in woman's milk 15.76 Of this total sum there is in extractive materials in cow's milk 6 (4.8-8.6) per cent, in woman's 8, 7 per cent. In his calculations the albuminoids in woman's milk amount to 1, 19-1,37 per cent. There is more syntonin in cow's milk casein, and more lime; (6,6 per cent compared with 3,2 per cent in woman's milk, Lehmann), more phosphorus in woman's (0.84) than in cow's milk (0.68), less sulphur in woman's milk (0.74) than in cow's milk (1.11). In "Lab" ferment the casein of cow's milk coagulates in coarser lumps than woman's milk; they are modified by the introduction of milk-sugar, of fat, of chloride of sodium, or of dextrinized or other flours.

The casein of woman's milk is not so easily thrown out by acids or salts as that of cow's milk and is more readily dissolved in an excess of acid. Wroblewski demonstrated that woman's casein retains during pepsin digestion its nuclein in solution. *This* proteid with its ample supply of phosphorus is fully digested; artificial gastric juice, however, does not fully digest the nuclein of *cow's* casein, of which a "paranuclein" is deposited undigested and undissolved. Besides, there are those according to whom woman's casein contains an additional albuminoid which is not identical with either the known casein or albumin (Koplik, *N. Y. Med. Jour.*, April 13, 1895).

According to Schlossman, of the albuminoids in woman's milk 63 per cent are casein, 37 per cent lacto-albumin, the latter of which is absorbed directly. There is, moreover, according to Wroblewski, in the human milk another proteid, rich in sulphur, poor in carbohydrate, and, according to some, albumoses and peptones, that also would be directly absorbable.

Of nucleon (V. Wittmaack and M. Siegfried, Zeitsch. f. phys. Chem. xxii) there is contained in cow's milk 0,057, in goat's milk 0,110, and in woman's 0,124 per cent. In cow's milk the phosphorus of the nucleon amounts to 6 per cent of the total amount of phosphorus contained in the milk, in woman's milk 41.5 per cent. That explains why good cow's milk with its inorganic phosphates may give a baby rhachitis, while *good* breast milk does not do so at all.*

There are some modern observations which seem to prove conclusively that the caseins of different animals cannot be identical any more than are their blood cells. Bordet discovered the fact that the fluid of cells and tissues and the blood sera of animals become influenced by the substances with which the later are treated. Subsequently Wassermann, aided by A. Schütze (Proceedings of the Society for Internal Medicine, of Berlin, meeting of July 2, 1900), injected 10 ccm. of sterilized cow's milk under the skin of rabbits daily, a fortnight in succession. After that time their blood serum acquired the property of coagulating cow's milk, that is, its proteid, but not that of another animal. Similarly other animals were treated with goat's milk, and others with woman's milk, with the result that their blood sera would coagulate the albuminate either of goat's milk or of human milk respectively. In every case this specific coagulating effect was observed in that kind of milk only with which the animal was previously treated.

There need be no better proofs than these of the differences between the caseins of different milks. But not only organic chemistry and biological research, but physiological observation alone leads to a similar result. The remarkable differences in the percentage of caseins appear to be connected with the development of the animal from which it is derived. Albumin is the principal tissue builder. That was a sufficient reason for J. von Bunge to study milk in connection with rapid or slow growth,* and to find an exact proportion between the growth and the milk of a number of animals. He found the doubling of body weight and the percentage of albuminate in milk after birth take place in

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*We should not forget that improper food is not the only, probably not even the most important cause of rickets.

Man in 180	days.	1.6	per cent.
Horse in 60	"	2	"
Beef in 47	"	3.5	"
Goat in 22	"	3.7	"
Sheep in 15	"	4.9	"
Hog in 14	"	5.2	"
Cat in 9½	"	7	"
Dog in 9	"	7.4	"
Rabbit in 6	"	10.4	"

It is not necessary to draw any other conclusion than that every animal has its own specific milk adapted to the wants of its own offspring, and that the belief that the milk of one animal can be substituted for that of another is a mistake.

It has often struck me as an incongruity when I observed how eagerly, almost fanatically, for important purposes it is true, the slightest differences were studied in the organic composition, and no attention was paid to the mineral constituents of milks. It is particularly phosphorus, potassium, sodium, iron, and calcium that should be looked after. Cow's milk contains twice as much phosphorus as woman's milk, *but* in inorganic combinations; iron is held in both milks in about equal amounts, much less, however, than in cereals and still much less than in fruit, vegetables, meat, and the yellow of an egg. Potassium is represented in a somewhat larger quantity in the milk of herbivores. Of 1,000 parts of desiccated woman's milk potassium is found to be 5-6, sodium 1-2; of desiccated cow's milk, potassium 9-17, sodium, 1-10 per cent. Thus it appears that when cow's milk is substituted for woman's milk, some chlorid of sodium should be added (when cereals are added the percentage of the sodium salt should be much higher), the more so as solid coagulation by rennet is prevented by the sodium chlorid. This is the rule I have always obeyed and taught. There is no better protection to the epithelia and the cell fluids than sodium chlorid. Excretion and secretion is to a great extent rendered safe by it. A solution of urea in water injures the epithelia of the uriniferous tubes, in salt water it is uninjurious. From a directly practical point of view it gratifies me to notice that in the person of Zweifel (Aetiologie, Prophylaxis, und Therapie der Rachitis, 1900) a well known authority rises in favor of full amounts of chlorid of sodium. He contends that rhachitis is due, besides an insufficient amount of soluble and absorbable calcium salts, to low percentages of sodium chlorid which E. Pfeiffer found to be less than one-tenth of 1 per cent (0.1) in the milk of women whose children were rhachitical. Zweifel tells us that though one-half of the women of Saxony nurse their infants, the bread they can buy is not salted. In regard to the quantity of table salt to be added to the food of infants he is not over-particular. He adds a thimbleful (3 grams) to 500 ccm. (a pint) of food, which is to consist of equal parts of milk and a 6½ per cent solution of milk sugar.

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*The Increasing Inability of Women to Nurse. Munich, 1900.

Calcium is represented in 1,000 parts of desicated woman's milk with 0,243, in goat's milk with 0,243, in cow's milk with 1,51 per cent. The latter figure is certainly high. Bunge, from whom I quote these figures, adds that as organic substances act as sources of organic force by decomposition or transmutation, and as salts are either saturated with oxygen or are chlorids and need no more oxygen, there is surely a disproportion between cow's milk and the organic want of the nursling. Now, do I believe that therefore cow's milk should be taken in hand and strained and decomposed and modified to get the surplus calcium out? By no means. If we have to rely on cow's milk and can not have breast milk under our imperfect social and sanitary conditions, why! let us be grateful that nature is not so cruel as she is believed to be and permits of a good deal of generous latitude in the feeding of babies, a great deal more than some of our laboratory tyrants.

Is it true that iron-clad rules as to the composition of a substitute are to the point or justified? Everybody knows that all these questions are not answered, but fifty substitutes are based upon fifty contradictory and uncertain chemical analyses.

In my opinion only one great progress has been made in infant feeding these dozens of years, viz., the more or less universal introduction of heating cow's milk and all other substances employed in infant feeding.

Sterilization, pasteurization, and tyndallization are different methods of heating cow's milk to preserve it or to prepare it for its use as an infant food. As long as sterile milk cannot be had with the usual dairy habits, as long as it takes a long time to get the milk from the producer to the consumer, as long as tuberculosis may be transmitted, at least now and then, by the milk of a tuberculous cow, or what is more frequent as long as scarlet fever and diphtheria are met with in the houses and about the clothing and on the hands of dairy men and women, and as long as typhoid germs are contained in the water used for washing utensils, or for adulterating the original article, some such method cannot be dispensed with.

A very few figures will demonstrate possible dangers. E. Cantley (Twenty-sixth Ann. Rep. of the Local Gov. Board Suppl. p. 243) when discussing the thriving of typhoid bacilli in milk, reports he found in a cubic centimeter, in January, 142,800, in July 8,119,200. Of indiscriminate bacteria Bunge found in a cubic centimeter of fresh milk 9,000, after one hour 31,750, after nine hours 120,000, after twenty-four hours 5,600,000, and remarks that a brief sterilization did not destroy all of them. P. Ignard (Thèse de Paris, 1899) reports that in unsterilized milk living cholera bacilli were found after 6 days, typhoid after 35, and tubercle bacilli after 10 days, in butter respectively 32, 21, and 30 days.

How unexpectedly great the dangers may be from what is generally called fresh milk, is shown by Leslie Eastes (*Ann. de Chir. et de Med. Inf.*, 1900, p. 186). He examined 186 specimens of milk furnished by health boards and farmers from all parts of England. He found tubercle bacilli in 11, pus in 47, muco-pus in 77, blood in 24, streptococci in 106, and colostrum corpuscles in 16, surely a bad showing. If that were the rule the suggestion that only summer milk and milk consumed in large cities should be pasteurized or sterilized, and that these processes were superfluous in the country, and in winter, would not be in accordance with the dangers thus exhibited. But such conditions are, I think, exceptional, and in most cases local. Fresh and good milk is not expected to hold more than 10,000 bacteria which must not be pathogenous. Still, Rabinowitsch and Kempner (*Z. f. Hyg. u. Inf. Krkh.*, xxxi, p. 137) collating the results obtained by various observers, found tubercle bacilli in from 14 to 61 per cent of all the specimens of market milk, though tuberculosis of the cows was incipient only and the udders not diseased; and Max Beck (*Viertelj. f. öff. Ges.*, xxxii., p. 445) reports the occurrence of pathogenous bacteria in 80 per cent of all the specimens of milk sold in Berlin, streptococci in 62, and tubercle bacilli in 30 per cent.

What is the object of heating to 100° or less or more, and its effect? Besides expelling air, heat destroys the germs of typhoid fever, Asiatic cholera, diphtheria and tuberculosis, and staphylo-and strepto-coccus, also the bacillus aërogenes and the numerous other germs which transform milk sugar into lactic acid, and those which increase the virulence of the intestinal saprophytes mostly belonging to the proteus and coli order. By so doing it prevents numerous cases of gastroenteritis, nephritis and degeneration of the liver and pancreas, of pneumonia and otitis, all of which we see in connection with intestinal disorders, mostly or perhaps always without the intervention of the blood current, in which bacilli are rarely found.

There are exceptions to this universal efficacy. Heins found cholera bacilli in sterilized milk after four weeks, typhoid after four months, and according to Dr. Lydia Rabinowitsch (D. Med. Woch. 1900 p. 490) experiments made in the Institute for Infectious Diseases in Berlin appear to prove that occasionally tubercle bacilli are not killed by less than 100°. Organisms surrounded by fat seem to require more than the average heat to be destroyed; in accordance with the findings of Ignard whom I just quoted, which appear to prove that unsterilized butter would preserve cholera and tubercle bacilli much longer than unsterilized milk. If that be beyond doubt, butter and rich milk would retain their infecting qualities longer then average milk with a *moderate percentage of fat.* So there may be a danger in fat milk which does not cling to milk that contains less fat.

Still, while all this is true in exceptional cases, the main object of destroying microbes by heat is as a rule accomplished.

This wonderful effect is generally obtained even below the boiling point. Tubercle bacilli (Hueppe), and the other germs named died at 80°C. in ten minutes, at 68° in thirty minutes with occasional exceptions. For the purposes of infant feeding it is of the greatest import that lactic acid fermentation should be prevented or interrupted. This can be accomplished when from two to three hours *only* in summer, and from six to eight hours in winter are consumed between milking and heating. More time should *not* elapse, for Russel and Parrington found that milk containing as little as one-fifth of 1 per cent of lactic acid was *too* sour for efficient pasteurization. I imagine therefore that when Koplik protested against pasteurization as a sufficient safe guard against gastro-enteritis, and insisted upon sterilization as a general rule he was carried to that extreme opinion by the fact that his milk cannot possibly reach him in New York City within two or three hours after milking. There is, however, no complete effect obtained by mere pasteurization because init the lactic acid germs are not all destroyed. It is good, however, that should be so, for their presence is a restraint to the unchecked growth of more dangerous bacilli.

The taste of milk begins to change at 75° C. (Duclaux), the milk albumin is altered at about 65-70°, according to some at 60. Dairy men ascertained that fact from their experience in cheesemaking. Jemma found that pepsin hydrochloric acid digests milk sterilized at 100° C. more slowly than it does raw milk. During sterilization lime salts are thrown out, phosphorus combinations are disintegrated, nitrogenous substances are liable to be decomposed into tyrosin, peptotoxin and ammonium, lecithin is destroyed, fat changed both chemically and physically. During a long continued sterilization casein and nucleon are likely to undergo marked changes, and the sugar has been found at the bottom as a brown deposit. That is mainly so when excessively high temperatures are employed, for instance 110° by wholesale sterilizers ("surchauffage"), which cause the production of peptone by the action of chlorine on casein, or 100-105° in steamheat. Even these high temperatures do not accomplish actual and complete sterilization in all cases. Chemical toxins are not changed by them or even by greater heat, and spores are very obstinate; such as those of bacterium subtile for instance, and tyrothrix, which resist the usual methods.

Tyndallisation is called the process of daily boiling. The first day the microbes are killed; when spores grow out, they are killed the next day. Three such daily boilings sterilized, in Soxhlet's observation, absolutely. Dahl exposed milk five times to a temperature of 100°, one half hour. That is similar to what I have practised and advised the people, both rich and poor, these nearly forty years. In my Intestinal Diseases of Infancy and Childhood, 1887, p. 18 I have the following: "After boiling, milk destined for the use of a baby during the day should be kept in clean bottles containing from three to six ounces (90,0-180,0), filled up to the cork, and the bottles then turned upside down in a cold place; such milk willkeep longer than milk preserved in the usual way. Before being used it should be heated in a water-bath; and by repeating this heating of the whole amount of the day's milk several times during the twenty-four hours, fermentation will be retarded and digestibility improved." The same teaching is found in my contribution to Gerhardt's Handb. d. Kinderk. Vol. I. 1876, second ed. 1882, and to Buck's "Hygiene." Such advice, taught by me these forty years, had its local effect I am certain. It took however the initiative of Soxhlet whose immortal merit it is to have systematized and popularized the practice of boiling and thereby sterilizing milk in single portions for the use of infants.

Should milk be pasteurized or sterilized at home, or should it be procured from a manufacturer who keeps a stock on hand for an indefinite period. These latter wares can never be guaranteed, and though they be dangerous, no taste or odor need betray them. Obstinate spores that were not destroyed during sterilization, will grow out, and most easily; when, as is always the case in such preparations, the milder and not dangerous bacteria have all perished. Thus occasional dangers and deaths will occur, and the lesson to be derived from these occurences is that domestic daily sterilization for ten minutes, or pasteurization twice that time of fresh pure milk, obtained as soon as possible after milking, is far preferable to the wholesale manufacturing of a marketable stock, which now and then has been kept and sold, in order not to betray its secrets, in intransparent bottles.

It is just such milk as has been kept a long time, in which the cream will permanently separate from the milk. This process begins during the first week, and in later weeks Renk (Arch. Hyg. XVI.) found 43, 5 per cent of all the cream in that condition.

According to A. Weber (Arb. aus. d. Kaiserl. Ges. Amt. XVII. 1900, p. 108) the present wholesale procedures of sterilizing milk cannot furnish milk that is absolutely free from germs. The nearer the milk he investigated approached absolute sterilization, the more readily could the gross chemical and physical changes occasioned by sterilizing be noticed.

He found Flügge's "poisonous peptonizing bacteria" three times in one hundred and fifty specimens of commercial sterilized milk. They were "hay bacilli" which cause a strong decomposition of albumin and copious development of sulphid of hydrogen. It is particularly this rapid putrefaction which proves dangerous to the nursling.

While in sterilized milk the anærobic microbes are neither numerous nor important, according to the same author, the ærobic kinds are able to peptonize milk in from one to two days (some species in from five to seven), and to cause putrefaction and produce sulphid of hydrogen. Raw milk is indeed protected by its milk sugar, which by being transformed into lactic acid destroys the effect of peptonizing bacteria; in sterilized milk the latter are apt to predominate.

Consequently, domestic daily sterilization (or pasteurization) is to be preferred to wholesale production, unless this be daily. That is why even Henri de Rothschild's advice is not unobjectionable. He attributes all the failures of sterilization to its erroneous methods only; he advises not to use the wholesale product when it is more than from eight to ten days old, and only in flasks of from 50 to 150 c.c.m., and prefers daily home sterilization of forty-five minutes each. Even in this, as we shall see, there are mistakes.

The destruction of microbes by heat forms such a progress over all previous methods of employing milk, that its disadvantages are too apt to be overlooked. In some cases heat is insufficient in its effects, obstinate bacteria not being destroyed, in other instances its excessive effect proves dangerous by destroying milk elements. While appreciating the latter danger which is due to prolonged heating mostly, we should never forget however, that the advantages of heating derived from the destruction of microbes, which are either directly pathogenous, or indirectly so by increasing the virulence of saprophytes, are incalculable. But with every degree beyond pasteurization the disintegration of the milk becomes more marked; therefore it appears that no greater heat than from sixty-five to sixty-eight degrees should be employed, though it may be found wiser to extend the process over a longer time.

The lower the degree of heat which may be expected to destroy lactic or pathogenous microbes, the more easily the integrity of milk is preserved. Now, Theobald Smith (Jour. Exper. Med. 1899; Vol. IV. N. 2) found that in distilled water, in physiological solution of sodium chlorid, in beef broth, or in milk, *when heated to* 60° C. (140° F.), tubercle bacilli die mostly in from five to ten, all of them in from fifteen to twenty minutes. The membrane however, which is formed on milk even at 60° C., keeps tubercle bacilli alive even after sixty minutes; that is why its formation should be prevented by stirring, or it should be removed.*

This low temperature preserves also the taste of milk and is at the borderline only of the temperature that coagulates lactalbumin. The confirmation of these observations made by one of the most reliable experimenters will not be wanting; then nothing will be required except a cheap and handy apparatus to prevent milk from getting warmed beyond 60°, thus preserving its freshness and reducing or removing its dangers.

One of the latter is scurvy which is a frequent occurence after feeding with sterilized milk. In an address delivered in one of the general assemblies of the Eleventh International Congress in 1894 ("Non nocere" Transact. of 11th. Internat. Cong. and N. Y. Med. Record, May 19, 1894) I could make the statement that some of my cases of infantile scurvy were those in which the patients had been on an *exclusive* diet of sterilized milk. I have seen many of the same kind since. They were not the first however, that had been observed, and since that time their number has increased. In No. 8 of the Sémaine Médicale of 1899 Netter publishes a similar one and gives a rich literature. Of the 379 cases of scurvy collected by the American Pediatric Society 107 occurred in infants brought up on sterilized milk without or with some addition. Of 67 cases collected by Von Starck (Deutsche Med. Woch. October 13, 1898) 14 were brought up according to Soxhlet, 2 Gaertner, 2 Biedert. Of 48 German cases collected by Von Starck 15 were attributed to sterilized milk. As early as 1895 (M. Med. Woch. No. 42, 1895) he complained of the occurrence of Barlow's disease since Holstein milk sterilized by manufactories had been introduced. It would be a mistake however, to believe that it is such sterilized milk only as has been kept for some time, that causes scurvy. In every one of my cases it was of domestic daily make. Indeed I do not known that manufacturer's sterilized milk, the "Dauermilch" of the Germans, is used in America to any great extent. To imply however, that I believe sterilized milk to be *the*, the only, cause, of scurvy would be a mistake. Referring to a case of Fruitnight's which occurred in a baby fed at the mother's breast, Marfan (L'Allaitement, p. 312) denies the connection between scurvy and sterilized milk and adds that whenever it apparently existed, it was overfeeding which caused the disease. But it is a fact that scurvy is frequent now, and was quite rare many years ago, before and after the first cases of Moeller's. If I were to count all the cases of "acute rickets" and "acute purpura" observed by me during the first twenty-five years of my active life and call them scurvy, they would not reach the number of genuine cases I meet now within a single year. There *always was* overfeeding, but little scurvy.

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* W. Hesse (Z. f. Hyg. u. Inf. Krkh. XXXIV, 1900, p. 346) states that 60° C. suffice to destroy the microbes of typhoid fever, Asiatic cholera, diphtheria, plague, bacillus coli communis, staphylococcus erysipelatos, pyogenes aureus and albus, bac. cholerae suum, bac. rhusiopathiae suum, bac. murisepticaemiae.

Though there is no reason to consider sterilized milk to be *the* cause of scurvy, it is *one* of the causes. In the American Pediatric Society's 379 cases 20 were fed on *pasteurized* milk; 129 on proprietary foods; 10 cases were developed at the breast, 5 on raw milk, and 2 on a mixture of breast-milk and artificial food. Some of my cases were fed on pasteurized milk. Three such were communicated to me by Dr. L. Emmet Holt; he makes the statement that daily pasteurization lasted 20 minutes in one case, 45 minutes in each of the others. This close observer declares himself to be opposed to pasteurization as a routine practice. The *long duration* of either sterilization or pasteurization appears to have a good deal of bad influence. The worst of my cases were those in which the parents proudly stated the routine time of sterilization to have been forty minutes or one hour.

While being so positive in my convictions, it is but just to say that many of my cases were not in connection with sterilized milk as exclusive food. In some cases it was mixed with water, in one case with oatmealwater (2:1), in many the feeding was wavering and unsystematical. A child of eleven months had been at the breast half a month, on condensed milk and water three weeks, on sterilized milk and barley water four weeks, on barley water and egg albumin two weeks, on malted milk two months, on sterilized milk and barley water since; one had been fed on sterilized milk and oatmeal water, on unstrained thick gruel and a daily dose of meat juice. One bad case a year old, had been fed on carefully pasteurized milk prepared daily in the establishment of N. Strauss, for nine months, and three more months on a mixture of the same milk with barley water prepared in the same institution. Denekamp's case quoted by Netter, in which a scurvy child that had been fed on buttermilk was cured by raw milk, belongs to that class and may well be quoted to support A. Caille's opinion that scurvy is a ptomaine poisoning caused by every improper food employed too long. Again however, the question arises in one's mind why it is that formerly, though babies were overfed,* and improperly and badly fed all the time, scurvy was rare amongst the very poor and the very rich, and that it has become frequent in those classes that can afford to spend much time on the destructive sterilization of milk and much money on proprietary foods.

One of the most systematic attempts at finding a substitute for mother's milk partly by means of sterilization, has been made by that ever active, vigorous, and enthusiastic worker, Prof. T. M. Rotch, of Harvard University. He calls his process modification of milk, the preparation modified milk. The milk to be prepared must come from a large dairy, in as much as most infections come from small ones; that is a demand experience taught me also these forty years. The usual precautions are ordered in securing and transporting and cooling it. In the laboratory it is "separated" by a centrifuge having 6,800 revolutions every minute, more than 110 every second. The cream thus obtained is mixed with the proteid, with milk-sugar, with water, a little lime water, everything in fixed proportion, and sterilized in separate bottles, each containing the amount destined for a meal. The newly-born is given much less than 1, aye less than ½ per cent of proteid, and the intention is to increase or to diminish now this, now the other ingredient, until the exact mixture is found which suits the baby. In opposition to his former views, he frequently selects at present decoctions of barley or oatmeal in place of water, as part of the mixture. I learn, however, that extensive laboratory researches carried on during the last summer under his guidance (not yet published), convinced him of the correctness of his former views. Here are some of his axioms:

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*Overfeeding, like hasty feeding, is mainly seen during artificial alimentation; the latter is not frequent at the breast, for to fill himself with the contents of a mamma, takes time and labor and generally fatigues the little gourmand. Bad results of overfeeding are frequent; acute diseases not so frequent as chronic disorders: Adiposity, pallor, lymphatism, eczema, tetany, furunculosis, polyuria, large defecations, large bellies, constipation or diarrhea, vomiting and tympanites. These are frequent occurrences; though I am not prepared to follow Schlossmann (Jahrb f. Kinderh. N. F. Vol. 48) who tells us that tympanites, constipation and bloated and pallid face are seen only in babies whose amylaceous meals are undigested and fermented, and in none besides, particularly not in those that suffer from the putrefaction of albuminoids.

"Try until you find the exact proportion." The principal object is to be able to write "500 different prescriptions." In his enthusiasm for exactness he went so far as to say that not so much an especial food was wanted as the principle of prescribing exactly. "Percentage feeding," though established as a principle, should certainly remain as a demand, an injunction, though its practical applicability be ever so difficult. By prescribing once or more times he feels certain he finds a substitute for mother's milk. Which mother's milk? we ask. Let me select *only one.* Johannessen and Wang (*Zeitsch. f. Phys. Chem.*, Vol. xxiv.) found in breast milk the following differences: Albumin 0.9–1.3 per cent, fat 2.7–4.6 per cent, sugar 5.9–7.55 per cent. They also found the amount of sugar to be less, but that of albumin and of fat larger towards the end of nursing, and they found the fat to reach its minimum in the course of the night. Now if the principle of prescribing exactly is uppermost, can we expect to follow mother's milk in all its alterations caused by individual differences, by morning or evening, hunger or overfeeding, menstruation and illness, and feed it to the infant in all its wavering conditions. That is impossible, the baby is given his uniform compound a long time. Still Rotch tries to meet all necessary changes. He gives his preparations in health and disease, "modified milk" is always the proper thing. Summer complaint, which contraindicates milk,is said to do well with "modified milk"; but then it must be so "modified" in these cases, that very little of any milk is left in the preparation. The question whether all babies thrive on this "modified" milk has often been answered. Many have replied in the negative; my positive experience is that very many thrive on it a certain time, for the mixture is sterilized in single feeding bottles holding prescribed quantities, but that very many become more or less rhachitical. Mild forms of craniotabes which require the addition of animal food and of phosphorus, and anti-rhachitical treatment generally, I have seen in many instances. There is no food in the world on which every baby would thrive, and thrive always, not even breast milk.

Rotch himself says: "The digestive capabilities of infants differ just as do those of adults, and nature therefore provides a variety of good breast-milks adapted to the individual idiosyncrasy of the special infant." With this fact impressed upon us we can well see that in artificial feeding no routine mixture will in all cases prove successful; and in spite of all his personal watchfulness and keen-eyed supervision I doubt whether even Rotch is able to comply, through any number of his 500 prescriptions with the apparent or actual necessity of frequent or occasional changes.

This "modified milk" feeding has become frequent in our large cities—Boston originally, New York, Philadelphia, Chicago. It is expected that a baby has a prescription given by the doctor, and that the daily portions are prepared in and sent from the laboratory. But the most frequent procedure is at present this, that people will apply at the laboratory and the barmaid in charge will prescribe according to the printed schedules of proportions which are said to correspond with certain ages—a very unscientific application of a method which was meant to be the very essence of scientific accuracy adapted to the individual case. One reason why Dr. Rotch insists upon the laboratory furnishing the separate meals, is that he does not trust mothers in regard to accuracy and to cleanliness, (Festschrift in honor of Dr. Jacobi, New York, 1900, p. 318). I must admit I am of a different opinion. I know of flies and other foreign substances in the "modified milk" bottles sent from some "laboratory." That they were also sterilized does not help the case: indeed, the larger thenumber of strangers and paid employees who are to do your work the greater is the possibility of mistakes.

The method is rather expensive and always must be. The annual income of many a workingman would have to be spent on the baby's feeding. The objections raised to this and the urgent necessity of finding substitutes for the population at large, rich and poor alike, made Rotch say (*Boston Med. Surg. Journal*, Sept., 1895, p. 293) that "the advance in infant feeding was very much impeded by the cry in New York a few years ago for cheap food for the poor."

There can be no doubt that the end aimed at by Dr. Rotch is partly obtained by securing a reliable and approximately fresh milk and by sterilizing it in small portions. In that he has performed, with Coit and others, most valuable educational and missionary work. That, however, the 6,800 revolutions a minute should leave the milk intact, that after the mixture of its "disjecta membra" we should again have milk is not very probable. Lunin (Dis. Dorpat, 1880) fed mice on milk and they lived, but they died when the constituent parts of milk after having been severed were recompounded. I know, however, of no experience of the same nature.

The "fat milk" ("Fettmilch") of Gärtner is also obtained by centrifuging and sterilizing. According to Escherich's analysis of woman's and of cow's milk, this preparation is to contain casein 1.76, fat 3, and sugar 2.4 per cent. It is preserved in tin cans, which are favorable to occasional decomposition. Bad odor, discoloration, and fat swimming on top are frequent occurrences. It is expected to be given indefinitely, and no consideration is paid to the fact that woman's milk (not to speak of colostrum) contains more albumin and salts and less fat in the first few months, but less albumin and salts and more fat later.*

It is advertised in boastful and sometimes unintelligible terms, according to the methods of modern commercialism, and is distrusted for that very reason by many members of the medical profession.

The identity of milk sugar in woman's and in cow's milk is very doubtful, and the milk sugar of the market is quite often impure. That alone makes it desirable or advisable to substitute cane sugar if this afford the same advantage. These four dozen years I have made that very substitution. Part of any kind of sugar, as also dextrin, peptone, and salt solutions, is absorbed in the stomach, part of the milk-sugar of the milk is changed into lactic acid by the bacterium lacto-ærogenes and bacterium coli, bacillus acidi paralactici (not-identical with Hueppe's bac. acidi lactici, Y. Kozai, Z. Hyg., 31, p. 337) and perhaps twenty more different germs. Possibly, however, there is an additional source of lactic acid which appears during digestion from one-half to one hour after a meal, for it seems that this short time is not sufficient to give rise to such formidable masses of microbes as are required for the purpose of transformation. Possibly therefore there are several kinds of lactic acid, which differ not only in proportion to the temperature in which coagulation takes place and the composition of the nutrient soil of the bacteria. Still all of this appears to be undecided. Absorption of milk-sugar need not always be direct, however. Some of the milk-sugar which was not absorbed as such, is perhaps (Dastre) decomposed by microbic action or by hydrochloric acid, or by some unknown ferment into galactose and glucose and then absorbed (Portier, in Soc. biol., April 2, 1898).

When eight-tenths of 1 per cent of the milk-sugar contained in the whole milk in the stomach are changed into lactic acid, no more lactic acid is produced. Ordinarily this limit is reached when about one-fourth of the milk-sugar has been changed into lactic acid. If at that period, however, lactic acid be neutralized by an alkali, then more milk-sugar is changed into lactic acid. In this way the amount of lactic acid present in the digestive tract and of its various derivata, depends on accidents only, that is, mainly on the presence or absence of an alkali, and it appears that in every preparation of cow's milk selected for the use of an infant there is milk-sugar enough to supply the needs of the digestive process. Moreover, a goodly part of the milk-sugar introduced, even in woman's milk is eliminated unchanged, for Blauberg (Studien über Säuglingsfäces, p. 55) found the desiccated nursling's feces to contain from 0.22 to 0.59 per cent of milk-sugar. Escherich found besides, that peptones which form in milk when kept, are destroyed by acid fermentation, and concludes that another carbohydrate should rather take the place of milk-sugar. It appears after all this that it *is easier to give too much milk sugar than too little*, and that the careful weighing and measuring of copious quantities of milk-sugar is of doubtful value. Fermentation in the intestine, moreover, should be carefully avoided for many known reasons. At this moment Dr. Helen Baldwin has published (*Jour. of Exp. Med.*, Vol. V.) investigations which prove the formation of oxalic acid as the result of intestinal fermentation. It appears also that my method of adding to the cow's milk mixtures destined for infants and children, not milk-sugar, but cane-sugar, in quantities estimated rather than anxiously weighed, was correct and is justified by modern research.

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*According to Emil Pfeiffer the percentages of albumin decrease until the end of the fifth month, those of sugar increase, those of fat and of salts differ very much, particularly the former. On the other hand, Heubner (B. Kl. Woch., 1894, No. 37) accepts the analysis of Franz Hoffman, according to which from the third week to the termination of lactation there is albumin in mother's milk 1. 03, fat 4. 07, sugar 7. 03 and salts 0. 21 per cent.

That fat calories* should be replaced by milk-sugar, as has been proposed, appears as an outrage except to those who mistake the infant for a retort. Let me add, finally, that:

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*The amount of organic heat that is produced by the carbohydrates is expressed in calories. Now it is easy enough to calculate them theoretically, by combining their carbon and hydrogen with the accessible oxygen, but practically this calculation is rendered futile by the condition of the digestive organs of the child, of his respiration, of the surrounding temperature, of the purity of the air, all of which modify metabolism. Nothing can be thought of that is more deceptive than this mere calculation of calories. Rubner, for instance, declares 234 parts of milk-sugar isodynamic with 100 of fat, and Soxhlet—great and meritorious man—pronounces equal parts of cow's milk and of a 12 per cent of sugar of milk solution to be isodynamic with mother's milk. That is why the substitution of one carbohydrate for the other has been advised. I admit that is all right for chemistry and atomistic composition, but ask the baby for its opinion, which will be as follows: "First I am constipated with sterilized milk, then I am purged with milk-sugar." All that reminds me of Moliere, when one consultant says to the other: "You let me bleed him, and I shall let you purge him." The baby will also say: "Yesterday the temperature of the air was dry and 15° C.. I was out all day and felt splendid, and had some use for all the calories I got; to-day the air is humid and 30° C., I am at home and feel sick, and shall be sicker if I have to take all your calories."

The anti-fermentative action of milk-sugar or rather of lactic acid displayed during the putrefaction of albuminoids, is shared by other sugars and by starch;

And that Miura proved that the small intestine of the fetus and the newly-born have an inverting ferment which makes cane-sugar absorbable.

Marfan gives cane-sugar because there are traders who give no pure milk-sugar and declares he finds no inconvenience in so doing. Evidently he has come to the same conclusion that I have arrived at by a clinical experience of nearly half a century.

According to what I said above, a milk mixture in which 25 per cent. of milk is contained, holds milk-sugar enough for the purpose of lactic acid production and of digestion.

I may here also be permitted to remind my hearers of my old recommendation, viz., to increase the amount of (cane) sugar in the food of infants when constipated, as a further proof of the identical or similar effect of the different varieties of sugar.

Generally, modern modification of cow's milk is not considered appropriate unless some cream is added to it. Voit taught us, indeed, that fat in the food prevents loss both of the fat and of the albumin of the tissues; but other carbohydrates do the same. Its percentage in cow's milk is very varying; when high it is considered dangerous by Monti and others. Still, Schlossmann pronounces the belief in the injuriousness of fat to be "antiquated," the excessive elimination of ammonium in the urine, indicating an increase of acid intoxication notwithstanding.*

Fat is added by Biedert and many others for two reasons, viz., first, to increase the nutritiousness of a food, and, second, to increase the digestibility of casein. I, on the contrary, have from year to year been more convinced that the fat of cow's milk should rather be reduced than otherwise. If that is "madness," there is "method in madness."

The normal feces of the nursling were long known, since Wegscheider, to hold 9 per cent or much more of not digested

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*J. T. Palmer feeds infants on raw milk containing from 4 to 6 per cent. of at and claims good results.—*N. Y. Med. Jour.*

cream. Lately W. Knöpfelmacher (*W. Med. Woch.*, No. 30, 1897) found that the fat of the feces of the adult and advanced child while they are fed on milk, consisted of from 12 to 20 per cent. of olein, of which the larger portion came from the digestive juices, the smaller from the unabsorbed fat of the milk. The fecal fat of the nursling, however, contained from 28.8–37.8 olein, only 5 per cent of which was due to the digestive juices; all the rest belonged to the unabsorbed milk fat. Thus, we may conclude that the latter is less utilized by the nursling than by the adult.

According to Heubner, (Berl. Klin. Woch. 1, 1899) in the breastfed infant 5,9 per cent, in the cow milk fed baby 5,3 per cent, in the infant with "weak intestines" 15 per cent of the fat introduced into the stomach is expelled undigested.

Now if so much is expelled unchanged, and it seems is useless, and superfluous—I refuse to enter into teleological discussions on the benign intentions of providence—the addition of cow's cream to cow's milk should not appear a sine qua non condition in the preparation of infant's food, the reason or alleged reason for that addition being that the amount of fat in cow's milk is so much inferior to that of woman's milk. Still, Heubner's investigations just quoted, prove that the feces of the nursling excrete nearly the same percentage of fat whether fed on breast or on cow's milk.

It is to this day inconceivable to me that in these discussions other analyses (also modern) should be persistently overlooked. There is Söldner with 3, 28 per cent of fat in woman's milk, there is Marfan (p. 10) who draws the average from Gautier, Féry, Gautrelet, Guiraud, Pfeiffer and Michel, which is 3,7 per cent of fat for cow's, and 3, 8 per cent for woman's milk. And in the face of these data cow's milk fat is added to infant food, equally in winter and in summer, while the Esquimaux of the cold climate have told us long ago that it is they that require fat, and ancient Hebrews of the torrid zone that it should be prohibited in broiling climates, or seasons. Nor has the frequency of (Biedert's) fat diarrhea, which has been noticed even in infants nursed by their own mothers, been a warning.

Moreover the fat of cow's milk differs from that of woman's milk. The latter has more oleic acid, less volatile acid than cow's milk; woman's milk contains its fat in a finer emulsion and contains from two to four times as many fat globules as are contained in equally fat cow's milk (Schlossmann). This condition makes it more digestible; it is assumed, and reasonably so, that the fine fat globules may be absorbed directly through the epithelia of the intestinal villi. Moreover, cow's milk fat before it is used undergoes changes. When taken after slow rising it is apt to acidulate, when sterilized and centrifuged it is changed chemically and physically, when frozen, it separates from the milk and does not mix again.

All of these facts and considerations and the low percentage in fat of asses milk, which was known to agree best with nurslings and to be inferior to woman's milk only (according to Vernois and Becquerel's analyses made fifty years ago) have led me to reduce rather than to increase the fat of cow's milk used for infant feeding. I meet with no fat diarhea and no excessive acidity when babies are fed according to that rule.

R. von Ranke's recent favorable experiences with asses milk (Festschrift in honor of A. Jacobi, New York, 1900) administered to young infants, one of which did not thrive at all previously; Klemm's report (Dresden 1898) on asses milk employed for the first two or three months, Marfan's corroborative opinion (Allaitement p. 299), and the earlier results of Parrot and West, leave no doubt as to the favorable effect of asses milk, with its low percentage of fat, at all events in the first few months of infant life. Asses milk is digestible and wholesome not in spite but because of its low percentage of fat, and in spite of its albuminoid being contained in larger quantities in asses than in woman's milk.*

What is proven for babies in the first months, I also claim for older infants. For them some fat may be added to asses' milk, perhaps, while the stools are being watched for undigested cream, but I know they do better with less fat than under the influence of laboratory analyses, not two of which are alike, is generally considered their due. I insist that a series of clinical observations made prudently and critically and extensively, must and will be esteemed as

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*According to Bunge (Phys. Chemie, 4th Edition, 1899) there is in the milk of

	WOMEN.	COW.	ASSES.
Albuminoid	1.7	3.5	2.3
Fat	3.8	3.7	1.6
Ash	0.2	0.7	0.5

equivalent to the results of measures and scales and microscopes; I say equivalent, neither superior, nor inferior, for there is no more virtue in the limited and boastful experimenter, than in the onesided and narrow practitioner. That is why to me it has been a source of great satisfaction to notice that in the writings of the last few years clinical experience is frequently appealed to and called in as evidence; and from that point of view I again appeal to the medical profession from this platform, than which I know of none more public and more authoritative, to revise theories and practices that I firmly believe to be wrong and dangerous.

The question of the dilution of cow's milk to make it acceptable and digestible is not easily answered, because there are some, even many, babies that appear to be almost inaccessible to injury. They seem to thrive on almost anything. Still everybody appears to agree on this that in case of sickness at least undiluted cow's milk is not tolerated. Meanwhile, particularly in France, the gospel of undiluted cow's milk has been preached extensively.

Variot resorts to sterilized milk when mother's milk is not tolerated, H. Rothschild details the cases of six newly born babies that were successfully fed on sterilized milk, Mauchamp* believes it completely replaces maternal milk. What he however, (p. 494) calls its "curative" effect cannot refer to anything but the destruction of dangerous germs by heat. And Chaternikoff reports (Thèse de Paris, 1899) on four crèches, in which pure sterilized milk was administered with "practically" (?), she says "no mortality at all."

My experience is, however, that there is not a more frequent cause of dyspepsia, except excessive summer heat and senseless amounts of pasty amylaceous foods, than undiluted cow's milk in the well and the sick infant.

In atrophic conditions dilution as well as diminution of nutriment, is a necessity, in bad cases of fat diarrhea in which indeed dextrinized flour and skimmed milk and mother's milk pass unchanged, even Biedert dilutes his cream mixture with three or four or probably more times its quantity of water; such is the result of his experience. What is found by experience to be indicated in disease is applicable to the normal condition, also as the result of experience. I have ever been convinced that the dilutions usually prescribed are insufficient. Now if there were such a thing as *condensed wcman's* milk, we should readily agree upon the method of dilution. But in artifical feeding we deal with cow's milk which is not only denser but also chemically different. The dilution for the newly born should be from four or six to one, and for a baby of six months one to one. So much for the regard to be paid to digestion. There are more reasons, however, for a high degree of dilution; such as I have published and preached without much avail, for one voice cannot carry far. It should be easily admitted however, by this time, that our babies are not given enough water. Breast and bottle contain food, not water. When babies are hungry they cry, when they are thirsty they speak the same language. In either case they are given food, and no drink. That is why babies should frequently be offered water, in some shape or other and it is easiest to add it to their food. The objection made to this plan is that it is said to lead to dilatation of the stomach. I firmly believe that objection has been constructed at the desk. I have not yet seen such a case, and the rapid muscular action of the almost vertical stomach endowed with good circular fibres, and the rapid absorption of fluids containing salts or sugar from it and from the long intestine with its well developed lymph apparatus and very vascular villi renders gastric dilatation very improbable, probably impossible. Water does not act like bulky indigestible food; in the condition in which it is in the infant's stomach, viz. with salts and sugar, it is readily absorbed. I have moreover seen diabetics drink five and ten litres of water and more, daily, for years, but no dilatation of the stomach from that cause; and three or five hundred more ccm. of water given to a baby in the course of twenty-four hours are no danger. But they are a blessing in more than one way. The frequency of uric acid infarction in the newly born, leading in many instances to the formation of renal calculus which is quite frequent, or to nephritis which *is very* frequent, is best corrected by flushing the kidneys from an early time. These many years that I and my pupils and others have insisted upon copious dilution of the food of the newly born and young infant, I have seen many less colics from nephro-lithiasis and less cases of nephritis than formerly.

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*Allaitement artificiel par le lait sterilisé. Paris, 1899.

Still nephritis is unfortunately very frequent; but then it has so many causes that one single measure cannot obviate all of them.

The selection of the diluent need not be discussed just now. But simple dilution of cow's milk with unmodified water is without avail in obviating the tendency of the milk to form tough and more or less indigestible curds. That is what I have been teaching these forty years, and what I find is acknowledged as correct by chemists such as Chittenden and by clinical observers.

The observation made by Raudnitz (Arch. Anat. u. Phys. Suppl. p. 267) that milk mixed with water leaves the stomach sooner than undiluted milk, if confirmed need not prove the greater digestibility of the mixture.

Again I wish to emphasize the necessity of considerable proper dilution of the food of the newly born, if artificial, and the frequent administration of water, if natural. Colostrum contains much more nitrogenous substance (3-5 per cent) than the milk of the 10th day and afterwards, and demands even more dilution than the mammary secretion when regularly established. It is very probable that loss of weight during the first week of life will be observed less frequently when plenty of water is administered.

If water is not the proper diluent of cow's milk, what is it? Cereal decoctions have always been preferred by me, partly because, partly in spite, of their containing amylum.

Amylum shares some of the properties of all carbohydrates. As early as 1881 Voit (Handb. d. Physiol. by Hermann, Vol, vi.,i.,139) proved their equivalence with milk-sugar and grape-sugar in regard to their effect on the decomposition of albuminoids. During feeding with carbohydrates the consumption of albuminoids is diminished and becomes in part unnecessary. Increase of muscle goes, to a certain extent, hand in hand with the *diminution* in the food of albumin and with the *increase* of carbohydrates. That agrees perfectly with the experience Gregor had lately (Arch. f. Kinderh., 1900) when he found that his infants when nourished on milk containing sufficient quantities of amylum were more active and less rhachitical than the average, and with Kassowitz's experience, according to which 50 per cent of his rhachitic infants were indeed breastfed, not to speak of my own observations now extending over much more than forty years and made on tens of thousands of infants in whom *not exactly large* amounts of amylum but cereals containing a *small percentage* of amylum, were proven to add to health and strength in preference to anything else when combined with milk, and with sugar and salts in the average cases, and in cases of incipient rhachitis with animal food.

It is understood, and Biedert and Escherich (Ges. f. Kind. Wiesbaden, 1887) emphasized the fact that milk-sugar cannot be tolerated in sufficient quantities to have all the effect claimed for carbohydrates. Nor is dextrinized flour (malt), even in Arthur Keller's opinion, the best, or only carbohydrate to be employed. Though using it in preference, he admits that safety lies mainly in the admixture of wheat-flour to his malt-soup, the latter when not so mixed giving rise to diarrhea. He states distinctly that the beneficent effect in doubtful cases must be due to the amylum of the wheat, inasmuch as all the other constituents of the wheat are contained in the malt also. Thus, he too attributes the principal effect to the amylum.

This leads us to the consideration of amylum from another point of view. Not only does it save feeding with albumin, the excess of which leads so easily to intestinal putrefaction, not only is it (together with other carbohydrates) the principal source of muscular force in general and of the heart in particular, mainly in acute diseases (and probably better than alcohol), but it acts as a direct intestinal antiseptic. I need not prove that, as it is a generally accepted fact.

Now then, what should be the material to be used for dilution of cow's milk? My objections to the use of pure or sterilized water are given above. Old men in the profession may remember that I always recommended cereals, mainly oatmeal or barley, the raw and not the dextrinized material, in such a proportion that about a tablespoonful of the powder was boiled in a litre of water, one-half hour or more or less, down to half a litre, this decoction to be used in certain proportions, as indicated above, with the sugared and salted cow's milk; the whole to be boiled or sterilized before using. I selected these cereals for the reason that they contained plenty of iron and other salts, and vegetable albumin, and as *little* amylum as any cereals or farinacea are known to contain.

Now, an additional word as to the admissibility of amylum in small or moderate quantities in the food of the infant.

Heubner (*Berl. Klin. Woch.*, 1895, No. 10) was converted to believe in the good there is in flour-feeding by the observation that infants sick with gastro-intestinal disorders bear and require flour, and that nurslings before the fourth month of life dextrinize and absorb it. He prefers simple flours, mainly oats and rice, to any compound. To him and to Carstens (Verh. Ges. Kind. Lübeck, 1895), a good deal of change in the public medical opinion in regard to the estimation in which flours are held is due. For, indeed, my labors of 1876 and long before (Infant Diet, 1872 and 1875, rules and regulations of the New York Board of Health, and papers on the same subject covering the last forty years) have been forgotten and seldom enjoy the honor of being quoted in our fast-living time.

At present it begins to be considered fair to accept that milk becomes more digestible by the addition of flour decoctions, and that starch is not only changed in the upper but also in the lower intestine, even of moribund infants, an occurrence which need not even depend on the presence of microbes (Miura, Zeitsch. f. Biol., N. F., xiv., p. 266).

I suggest that whatever is possible in the sick and in the moribund, is not difficult in the well.

Is amylum digested by the very young?

Schiffer (Ub. d. saccharificirenden Eigenschaften des Kindl. Speichels, Dubois u. Reichert's Arch. iv., 1872, p. 469, and Berl. Kl. Woch., 1872, No. 29) proved the transformation of starch into sugar within from five to ten minutes in the mouths of babies, of whom one was two hours, one sixteen days, and one two months old. Zweifel (Unters. üb. d. Verdauungsapparat der Neugebornen, Berlin, 1874) demonstrated the diastatic effect of the parotid of an infant of seven days within four minutes; even in the case of one that died on the eighteenth day of its life of gastro-enteritis, there was some little diastatic action in the parotid infusion. Korowin, in his last paper on the subject, (Arch. Kinderheilk, 1875, p. 381), says, verbally: "There is a distinct diastatic influence of the oral secretion from the first minute. It increases with every month. Infusions of the parotid prepared at different periods after death will transform starch. Infusions of the pancreas of infants that died in the first three weeks had no diastatic action; it begins with the fourth week but remains feeble to the end of the first year."

These and other facts I have carefully stated in my contribution to Gerhardt's Handbuch, Vol. i, 1876, and in the second edition, 1882, pp. 99–103, and in many other publications, and taught them dozens of years. They have been just as carefully neglected, and if ever some of them were quoted, they were mostly quoted erroneously. Even Marfan makes a mistake (L'allaitement, p. 116) when he says, referring to Korowin and others: "En somme ce ferment est absent ou en très petite quantité dans les premiers temps de la vie; â la vérité, le jeune enfant n 'en a pas besoin puisque le lait ne renferme point d' amidon. Mais on comprend les dangers qu'il y a à alimenter les nouveau-nés et les nourrissons avec des féculents avant la fin de la première année." I do not share, however, any teleological points of view; nature does not mind them, she kills and cures, prevents or destroys, with sublime indifference. A similar mistake has been made with unusual pertinacity by a late writer, Gregor (Üb. d. Verwendung d. Mehles. in d. Säuglingsernährung, Arch. f. Kinderheilk, 1900, vol. xxix.), who for that reason comes to wrong conclusions. His case becomes no better by his adding to his mistakes when (to mention only one example) he cites me among the thoroughgoing adversaries of farinaceous admixtures to infant foods, and adds that there is "no sufficient clinical experience" on the subject, before his own. Unfortunately, most "clinical experiences" were made with excessive quantities of starch, for instance, those referred to by Henoch and von Dusch.*

Whenever flours are mentioned the question is always not of a rational administration but of an excessive or exclusive supply, and the terrors of the latter are attributed to the former. That is not a very conclusive method of reasoning and not exactly "scientific."

Let me say a final word on the feces of babies fed on my mixtures. There is very little, if any, fat in them, the large masses of casein (and fat) which are frequently found after

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*All so-called infant flavors, inclusive of Liebig's soup, are improper on account of their large percentage of amylum (*Deutsche. Med. Woch.*, 1883, p. 391).

exclusive cow's milk feeding in the constipated or diarrheic stools are not found, and there is very little amylum noticed in them and some times none at all. When there is any, it is not enough to do harm; it is indifferent.

Do I say that my method is infallible? By no means. What I claim is that I have been more successful with it than with any other and have the advantage of having begun and continued it upon the foundation of clinical experience now of nearly half a century, and find my position fortified both through the researches and the failures of others.

Without cow's milk no substitute infant food, mine included, can be thought of. That is why the one great desideratum will always remain, viz., good milk. Individualism and competition have always seemed to work in the direction of deterioration of that article, for commerce knows no pity. It is in some instances, however, that I know of, that honorable dealing and financial success went hand in hand. There are gentlemen in every profession and trade.

Municipal strict superintendence may do a good deal for the protection of infant life, and has accomplished something. Efficient aid may come from future changes in the structure of human society; at present the exertions of states lie still too much in the direction of mutual destruction, as that of "Emperors" in that of giving no quarter; and still, fair beginnings have been made everywhere leaning towards the acknowledgement of mutual responsibilities. Call it what you please, socialism or otherwise, I believe the time will come when even babies will be considered entitled to live, and to live in the enjoyment of health.

EDITORIAL COMMENTS

Dr. Louis A. Sayre

The press notices of Doctor Sayre's life and work have been numerous and, for the most part, just and appreciative. The main events in his professional life since his graduation in 1842 are familiar. We feel, however, that it is little more than our bounden duty to express, at least briefly, some of the obligations under which the pediatric art finds itself when Doctor Sayre's professional labors are spoken of. To the medical man of the new generation fixation in tubercular disease of the bones is a principle learned on the first page of his text-book. For such a one it is not easy to realize that Doctor Sayre practically discovered that principle, and that his originality and ingenuity had much to do with the comparative hopefulness we feel to-day in treating such disease. He leaves a monument behind him which is not apt to crumble away very soon. In the best sense of the quotation from Holy Writ: "He rests from his labor, and his works do follow him." B.

Examination of the Urine In Infants

To most medical men in busy practice the routine examination of the urine may seem a needless refinement,—a waste of time. It is, however, a rule of procedure to which (in the words of the noted Englishman) "a deeper philosophy will not refuse its sanction." Increasing experience proves that our errors have been nearly always of omission; that to presume without examination that any organ either in the adult or infant is sound, is to invite confusion and danger.—There is no argument against it except the plea, "too much trouble." The increased attention given in recent years to the renal and vesical disorders of children has shown conclusively that they are by no means infrequently subject to these diseases. Not only the rarer infections of the bladder, (e.g., colon bacillus cystitis, upon which an editorial comment appeared in PEDIATRICS last year,) are to be feared, but many others as well. There would be fewer reports of "gastric fever," "typhoid," and "congestion of the lungs" in babies, if the urine were examined. An intelligent mother or nurse can almost always save a few drachms of urine if taught how; and a few drachms are quite enough for examination as to albumin, sugar, leucocytes, and casts, which are the chief points in any ordinary clinical analysis. When the "trouble" is so small and the comfort of knowing what the urinary system is doing is so great one wonders at the blindness of the man who waits for dropsy or uremic convulsions before "suspecting" that something is wrong with the baby's kidneys. A safe practical rule, and one from which there should be no deviation, is *examine the urine of every patient*, regardless of his age and of his apparent disease. The result of every examination will be, "more light." Leube's words on the subject should be framed and hung where the professional man can see them every day: "The omission of a urinary examination I heed to be nothing short of a capital error." B.

The Third Pan-American Medical Congress

The announcement for the coming meeting of the Third Pan-American Congress, in Havana, December 26, 27, 28, and 29, 1900, has been received from the secretary, Dr. Tomas V. Coronado, of Havana.

The Executive Committee hope to obtain considerable reduction in the traveling rates, and for this reason would like to know beforehand the number of prospective visitors and their places of residence.

The officicial languages of the Congress will be English, French, Spanish, and Portugese.

CORRESPONDENCE.

A Reply to Dr. Blake White.

Mr. Editor:

A paper read before the Medical Association of the greater City of New York, April 9, 1900, by Dr. John Blake White, and published in a recent issue of PEDIATRICS under the heading original articles, has been put in a most appropriate place as a relic of past originality. If you will kindly permit, Mr. Editor, I would like to mildly dissect the article in those places where it comes directly in contact with scientific truths.

Diphtheria has been investigated for many years, and as a result of these researches millions of lives have been saved. The treatment is not at all uncertain, "nor is the scourge often victorious over the chances and uncertainties of treatment, neither precise in their action nor positive in their results." The present methods of treatment have been attained after years of labor by "theorists abroad," and, thanks to the German scientists, we are now enabled to reasonably assure our patients of the good results of the present method of treatment.

Dr. White recognizes three distinct forms of membranous exudation about the air passages, the one presenting itself in grayish, aphthous patches; another—a local, non-contagious inflammatory affection about the epiglottis, and a third—a specific, contagious, infectious, etc. He, however, forgets to add a fourth, which presents all the clinical symptoms of diphtheria without the bacteriological, and which does not react upon the use of the much despised antitoxin. This class has its membrane produced by streptococci principally, instead of Klebs-Loeffler bacilli. Of these cases I have met three, two of which died. The author describes the great malignancy of diphtheria on page 43, and after going over all the horrible symptoms produced in the last stages of diphtheria, says, in the second paragraph: "The last alone are diphtheria, and the nature and efficacy of remedies vaunted for a successful treatment must be tested in the presence of these characteristic symptoms to establish faith in their efficacy."

I would like to remind the doctor that the symptoms he there quotes are characteristic only when they are present, that is all. Under the present management of diphtheria (in a civilized community), those symptoms are seldom or never found in a true case of diphtheria unless it had been neglected by the family or the non-progressive physician.

The original article is very misleading, especially to those practitioners who see only a few cases yearly. It certainly is important to recognize cases of exudate diseases of the throat early; but no living man can "promptly decide and announce" what case he is called upon to treat. Furthermore, other throat diseases are just as liable to be carried from one to another as diphtheria, even, e.g., follicular tonsillitis. No man relies solely upon the evidence of bacteria before treating his case properly, otherwise the patient might easily reach the stage described by Dr. White as malignant. On the contrary, he immediately begins to treat the patient and thereby saves twenty-four hours time.

Klebs-Loeffler bacilli are found, apparently, in healthy children, but that does not destroy the value of the fact that those same bacilli cause malignancy. How many bacilli do we inhale daily, yet how many of us develop tuberculosis; but are we justified in claiming, therefore, that tubercle bacilli are not the cause of consumption?

In the case quoted (page 44) I would like to remind the doctor that it does not follow that diphtheria is not present because the bacilli are not found at the first examination. There may have been some fault with the apparatus which conveyed the poison from the throat to the receptacle for cultivation; we simply have the doctor's word for "great care," as he seems to disbelieve that the bacilli are necessory to the production of diphtheria, we must take his word in this regard *cum grano salis*. For the doctor's benefit I may state that there was, in all probability, no care taken at all, as was shown by the later culture. The bacilli are always present if one knows where to look for them upon the membrane, within its substance or at the edges. The child apparently was in good condition at the end of ten days, without the aid of a specific.

To illustrate: Some time ago I was called to intubate a boy, aged 9, who had pharyngeal diphtheria for a week, then suddenly developed stenosis of the larynx. The boy died of toxemia within a few hours. The doctor in attendance told me that he never used antitoxin in pharyngeal diphtheria, and "they all got well so far." I told him always to observe this rule, by not giving antitoxin in pharyngeal diphtheria, nine out of ten cases will get well, but the tenth will die. If, however, antitoxin be given to all ten cases, *all* will recover. I am not an enthusiast by any means, but had to learn these facts from bitter experience. It may be the habit of some physicians in certain rural districts "to group together all patchy diseases of the throat as diphtheria, then by using a drug to claim wonderful recoveries." I would again remind the doctor that in all well regulated cities of sufficient size, a bacteriological examination is always made before a claim of cure can be established; in other districts those who do not avail themselves of the laboratory would usually not use antitoxin any way. The claim that diphtheria so frequently complicates scarlet fever is not true, at least not in our city. We have 352,000 inhabitants and therefore could not reasonably expect it not to happen occasionally. I have seen it but once in several hundred intubations. Antitoxin can do no more good in such cases than in an uncomplicated one; it relieves one train of symptoms only. The most serious cases we have to deal with are certainly mixed infections, but they are actually very rarely serious. We always have mixed infections, but one class must always predominate and that is the one we endeavor to relieve; the rest are easily attended to. The doctor makes grave charges when he says that formerly attending physicians, without doubt, have certified that scarlet fever patients have died from diphtheritic croup, but later, in their eagerness to extol the value of antitoxin, attributed their fatal cases of diphtheria to scarlet fever. I do not believe such dishonest cowards exist in the profession. They have nothing to gain by lying, but everything to lose. I therefore challenge the doctor's statement.

The pathogenesis of the disease is not so complex to others as to the doctor; if it were, our efforts would all be in vain. The theory of alkaloidal poison lead to the other an antagonist demonstrated external to the body and administered to the economy by means of a similar vehicle and proven to be efficacious. It is not at all difficult to see into it now, but many years ago when we held opinions similar to those of Dr. White and a very few others in the West, our results were also similar. Those who depend upon their experience and the clinical picture, and discard the microscope and "culture test" belong to a past age. In many cases we have gotten through groping in the dark, but none are so blind as those who will not see. Unfortunately, in this country we are obliged to do our work alone, while those across the ocean are paid by the government and spend a lifetime upon a single problem. We must therefore concede their ability to do scientific work, in many cases, better than we can.

Now to the attack direct: "The indications and treatment of diphtheria are naturally those which suggest themselves in every other condition of toxemia. All efforts should be directed, first, to sustain, then to aid with such means as we can command the efforts of nature in her benign struggle to eliminate the noxious principle from which the body is suffering." In diphtheria we have nothing to do with any other condition of toxemia; we are treating the toxic condition depending upon the alkaloid of the Klebs-Loeffler bacillus only, *nothimg else*. A definite substance, antagonized by another definite substance, just as positively as potassium iodide antagonizes the toxin of syphilis. Our efforts are not directed, to first sustain, then aid, our patient; for when that stage has been reached it is usually too late. Nature in 40 per cent. of cases is unable to relieve herself of the poison. At the present time our little patients are relieved long before the sustaining process becomes necessary.

By the antitoxin combining in the blood with the diphtheria toxin as does potassium iodide with the toxin of syphilis, nature eliminates the chemical product before the occurrence of the sequelæ. By following Dr. White's advice, another million would be added to our already over-populated cemeteries. We all, formerly, had a certain percentage of deaths: I have a certain percentage now; but the cases I operate on are all such as have received the antitoxin late or not at all; yet the death rate is away down. I am acquainted with two prominent physicians in Buffalo who have treated over one hundred cases of diphtheria, proven to be such clinically and bacteriologically without a *single* death. In the antitoxin treatment there is no doubtful effort to do good, and never inflict harm. There have been recorded five deaths, at the time, or immediately following the injection of antitoxin. That, however, should not deter us from using it. How many cases of death have been reported as due to chloroform? Yet who would think of discarding it for any such reason. Every year one or more deaths are recorded as a result of vaccination. Who would discard the virus on that account? We are not superadding another toxic influence to one already existing. Antitoxin is not a poison, except in the hands of the unprogressive physician, using too great a bulk, dirty instruments, dirty hands, or a deteriorated sample of the drug. It may prove non-effective from too late administration, or insufficiency of the dose. The conditions occurring formerly from the use of one-fourth to one-half ounce of serum have been entirely eliminated. It is now the exception to have any of those complications occur, which were formerly too loudly proclaimed as being due to antitoxin. Statistics can be made to prove anything you want. On the other hand they can be made to prove nothing. Henry George used to say that he could plaster the wall with statistics, and prove anything and everything. We will admit, however, that statistics prove, in the case of diphtheria, that the death rate throughout the world had been brought down from 40 to 13 per cent.; of tracheotomy, from 90 to 50 per cent.; intubation, from 75 to 35 per cent. by the use of that so much dreaded drug—antitoxin. The reason why there is now and then a howl against antitoxin is because, first, it is improperly used; second, too little administered; third, its efficacy has been destroyed by age or exposure; fourth, it has been destroyed by dirty skin; fifth, about 1 per cent. die, even though antitoxin be used scientifically. Now then, barring that 1 per cent. which will die, permit me to make this broad statement, partly upon my own, and partly upon the experience of others, that antitoxin, when used early, will prevent death in every case; but that when fatty degeneration of the heart and other organs has taken place, usually the patient dies. It makes no difference what day of the disease antitoxin is given; *early* means before the toxin has done harm to a vital organ. Fatty degeneration of the heart is manifested by a weak second sound, which gradually grows imperceptible. It is likewise an indication that other organs have suffered, and albumin will be found in the urine. If both sounds are strong, and the pulse bounding, that patient will get well. I am not speaking at random, by any means; I have put antitoxin to the test, severely. For instance, after having established the existence of diphtheria the patient is treated with antitoxin *only* (with, of course, resort to tracheotomy or intubation, if required). No other drug is given, no gargle, mouth wash, antiseptic, or tonic. In every case where the poison has not already caused fatty degeneration, the patient gets well.

Another misleading statement is, that attacks of diphtheria in the same subject are exceedingly common. The fact is that a second attack is very uncommon, more so than in scarlet fever.

"When we consider the perils which environ this general disease, the prostrating toxemia, the immediate danger of paralysis of the heart or respiratory muscles, and the surely prospective invasion by the diphtheritic pellicle of any wound inflicted, a resort to either act of aggression would seem to be especially contraindicated."

I fail to appreciate the lamentation in the closing remarks, when there there is such a harmless, but still potent drug at hand which, certainly in skilled hands, will prevent all those horrible symptoms, suffocation, etc.; I should feel awfully guilty, were I of the same opinion. I am sorry the doctor intubates "with a degree of hope," and always hesitates to do tracheotomy; I go about it so cheerfully, not with a degree of hope, but with the assurance of an almost positive result. When intubation does not succeed then tracheotomy is done; but when this becomes necessary the case is grave, indeed, and usually beyond antitoxin.

The article of Dr. White is beautifully written and most readable; but, alas, is so misleading, so unprogressive, so skeptically unscientific, that I cannot forbear criticizing some parts of it. A physician reading his article, who sees but one or two cases of diphtheria a year, might easily be converted to his false theory. I would, therefore, present the other side of the question and let the reader choose between us.

Yours truly,

GEO. F. COTT.

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FOREIGN PEDIATRIC JOURNALS.

Abstracts of all Original Articles that Appear in Foreign Journals Devoted to Pediatrics under the direction of George Alexander Saxe, M.D.

ANNALES DE MÉDECINE ET CHIRURGIE INFANTILES, July 15, 1900.

1. **Investigations Concerning the Prophylaxis of Diphtheria.**—By E. PERIER, Editor of the *Annales*. The questions sent out were:

1. What bacteriologic method do you employ in order to obtain a positive diagnosis of diphtheria?
2. Do you consider the bacillus of pseudodiphtheria a special, distinct species or only an attenuated form of the true diphtheria bacillus?
3. What importance do you attribute to the finding of Klebs-Loeffler bacilli in the mouths of healthy individuals?
4. Upon what do you base the determination of the period of isolation of diphtheritic patients?
5. Do you favor the establishment of special institutions for the reception of convalescent diphtheria patients because the bacilli of diphtheria are found in the throat for a long time after the disappearance of the clinical symptoms?
6. Do you consider necessary the isolation of healthy individuals (in the family or in the school) in whose throats the bacilli of diphtheria are found?
7. What special prophylactic measures do you prefer to adopt during epidemics of diphtheria in families, schools, hospitals, etc?

" The collaborators are not limited to these seven questions, but the editor will be grateful for any other information that may be sent to him on the subject."

The following answers were received:

Professor Grancher (Paris).—1. In practice microscopic examination of the membrane is sufficient, but a scientific diagnosis of diphtheria can only be made by inoculation into rabbits. Antitoxin must be administered in the meanwhile. 2. The pseudo-bacillus is not an attenuated form of the Loeffler bacillus but a distinct form; for it is impossible to render these pseudo-bacilli virulent. It is possible that the human organism possesses means of attenuating or enhancing the virulence of a germ, but we do not know anything about these means. 3. The true diphtheria bacillus only exists in the mouth of diphtheritic patients. Grancher considers virulent germs alone as the true Loeffler bacilli. 4. The only sure sign for determining the duration of isolation is the absence of the specific bacilli; the time of its disappearance has hot yet been determined. 5. He favors the establishment of asylums for convalescent diphtheritic patients. 6. If the Loeffler bacillus found in the mouth gives virulent cultures, isolate; if not do not. 7. The measures which he has adopted since 1888 are satisfactory as contagion was successfully prevented.

Professor Barbier (Paris).—1. The presence of the long bacillus in cultures leaves no doubt as to the diagnosis, provided the clinical signs correspond. If short bacilli are present, the diagnosis remains uncertain until the real significance of the germ is known. 2. He is non-committal on the question as to the nature of the pseudo-diphtheritic bacillus. 3. The presence of Loeffler bacilli in the mouths of healthy persons represents a danger both for the bearer himself and for his surroundings. 4. Disappearance of the bacilli from the affected mucosa. 5. Favors such asylums. 6 and 7. Healthy persons who carry bacilli must be isolated, their mouths and throats disinfected, and the sick-rooms must be disinfected after the bacilli have disappeared.

Dr. Richardière (Paris). 1. If cultures contain long bacilli and if there is membranous tonsilitis or croup, he considers the diagnosis as almost certain. Inoculation only can make it absolutely certain. 2. He believes that the short or pseudo-diphtheria bacilli are absolutely independent of diphtheria. He found them in 12 cases out of 15 in healthy mucous nasal membranes. 3. No importance should be attributed to the short germs. The medium-sized and the long germs are extremely rare in mouths. If they occur, we must test their virulenc by inoculation. He waits several days after the diphtheria (?) has disappeared in order to be certain that the child is no longer capable of spreading contagion. The virulence of the germs that remain after the angina has disappeared must be tested. 5. Favors these asylums. 6. Isolate healthy persons with germs in the mouth only if these be the long bacilli or the medium sized bacilli, and if these be virulent. 7. Isolation, supervision, registration; he has abandoned preventive inoculations.

Professor Massei (Naples). 1. Culture to be examined. If doubtful, serum to be administered notwithstanding; clinical signs of value. 2. Probably these bacilli have nothing to do with diphtheria. Germs found in the mouth of healthy persons may be considered as non-virulent. 4. Isolation to last, in general, two or three weeks, but frequent examinations of the throat for bacilli are needful. 5. Simple disinfection of the mouth after administration of antitoxin and isolation until bacilli disappear are sufficient measures. 6. Does not favor the establishment of asylums for convalescents, etc. Isolation of all persons in whom Loeffler bacilli are found is necessary. 7. Prompt isolation, early use of serum, inspection of schools, disinfection of rooms, furniture, etc. Favors prophylactic injections of antitoxin if case of diphtheria develops in ward where there are other patients. The serum may be used instead of bacteriologic examinations in doubtful anginas.

Professor Concetti (Rome).—1. Uses Neisser's stain for bacilli cultures on agar, urine, and glucose. Loeffler bacilli are stained yellow with blue ends. 2. Pseudo-diphtheria bacilli should be considered as attenuated forms of the true germ. 3. Diphtheria bacilli in mouths of healthy persons have the same significance as other micro-organisms found under similar conditions. He would not trouble himself too much about them; but if they occur in a convalescent he would test their virulence. 4. Fifteen to twenty days after disappearance of the false membranes is a safe time to stop isolation. 5. Such establishments may be considered as luxuries. 6. Absolute isolation, observation of all persons who have come into contact with the patient a few days before the disease developed; disinfection; preventive inoculation of antitoxin to children who come into contact with the patient. In a school, if one case is followed by a second or third, he would order immediate closure and disinfection. 7. Effects of disinfection of the mouth are illusory.

Professor Heubner (Berlin).—1. In doubtful cases inoculation of animals is necessary. 2. Non-committal. 3. Either the germs found in healthy mouths are non-virulent or their hosts are immune. 4. Disappearance of all clinical signs is the signal for termination of isolation. Virulent bacilli may be found in the mouth of patients even several months after recovery. 5 and 6. Theoretically, favors such asylums; practically impossible because of expense. 7. Prophylactic inoculations of children exposed to infection repeated every three weeks.

Dr. Rolleston (London).—1. Examination of cultures as basis of diagnosis. 2. Clinically, pseudo-bacilli are treated in the same way as true bacilli. 3. Knows of cases where diphtheria was contracted from germs in mouths of healthy persons. 4. Usual period of isolation is three weeks after the disappearance of all clinical symptoms. No bacteriologic examinations is made. 5. Special asylums of this kind would be desirable. 6. It is not necessary to examine for Klebs-Loeffler bacilli in a person before the throat is complained of. 7. No special prophylactic measures are adopted for attendants at his hospitals except cleanliness.

Dr. Violi (Constantinople).—1. Microscopic examination by Gram-Cutine method on coagulated serum. 2. Various germs are known as pseudo-diphtheria bacilli. If the pseudo-diphtheritic type of Loeffler and Hoffmann is present it may be evidence of an attenuated diphtheria; Martin has shown that this germ may be toxic, even when deprived of its virulence. 3. May compare them to streptococci, etc., in healthy mouths, i.e., they may become virulent in certain cases. Virulent diphtheria germs may also be found in healthy persons. 5. Disappearance of the bacilli. 6. Isolation necessary for patients clinically cured. Such patients must also use antiseptic gargles. 7. Isolation difficult to accomplish in practice, 7. Isolation, disinfection of all soiled articles and rooms, etc. Disinfection (?) of persons who attend the patient.— (*To be continued.*)

PEDIATRICS

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VOL. X. NOVEMBER 15th, 1900. No. 10

ORIGINAL ARTICLES

*FACIAL DIPLEGIA FOLLOWING MIDDLE EAR DISEASE.

By LUTHER C. PETER, M.D.,
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A PALSY of the seventh nerve is not an unusual occurrence during the latter period of childhood and in adult life, but a double palsy or facial diplegia is a comparatively rare phenomenon even in the adult.

The history of the case which I present to you to-night is as follows: The patient is a girl of 14 years, the oldest of six children. On November last she was confined to bed with a severe attack of scarlet fever; during the second week of her illness she had pain in both ears, accompanied by a free dis-discharge, and a few days later the nurse in attendance noticed that the child had difficulty in drinking—fluids ran from the corners of her mouth. There was, however, no regurgitation through her nostrils as is common in palsy of the soft palate. About the same time also it was noticed that she did not close her left eye during sleep and that she could not close it by voluntary effort. Her parents are not sure that a similar condition existed on the right side also from the beginning, but

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* Read before the May meeting of the Philadelphia Pediatric Society.

at all events but little time could have elapsed between the onset of the trouble on the two sides, since it was not noticed that the face was drawn to one side until of late. The marked drawing of her face at present is due to partial recovery on the left side, while the right side shows little evidence of improvement.

From the mother's account, the child's forehead was smooth, and her facial expression was much changed, remaining impassive during emotion. Her recovery from the fever was slow, and in addition to the complications already mentioned there was one other complication of very great interest. During the latter period of her illness there developed about her shins, knees, thighs and elbows purpuric spots which were arranged regularly and varied from a half inch to two and a half inches in length and a half inch in width. Many of the resulting scars are present now, although much reduced in color and have the appearance of a fresh cautery scab. They do not resemble the ordinary purpura, but apparently are due to subacutaneous hemorrhages.

When she first came under our observation at the Medico-Chirurgical Hospital, April 5, 1900, we found her condition as follows:

At rest the right side of her face droops decidedly, and during emotion remains impassive. The mouth is drawn to the left and the naso-labial fold is obliterated on the right. She cannot whistle, and any effort to contract the muscles of the lower part of the face results in a marked drawing to the left, producing the appearance of a one-sided facial palsy.

In the upper half of the face the double palsy is more apparent. The forehead is smooth on both sides and no amount of voluntary effort can produce contraction of either brow. The palpebral fissures, too, are wider than is normal, which produces slight bulging of the eyes. On the right side this is more apparent because the lower lid tends to fall away from the eyeball. When the child endeavors to close the eyes the left lids approximate but imperfectly, while on the right side the lids remain fixed and the eye is rolled up until the pupil hides beneath the upper lid. There is little expression even during emotion ; in fact except for drawing of the mouth the muscles remain fixed during laughter. She does not, however, have the mask-like expression seen in a case of typical palsy as it occurs in advanced years. This is easily explained by the partial recovery on one side and also by her youth. The subcutaneous fat of chilhood hides deformity by preserving the normal contour of the face.

She cannot hear from either ear, but tests seem to indicate that it is a deafness of conduction rather than of disease of the auditory nerves. The malleus and incus on the right side and the malleus on the left have been washed out, and there is denuded bone in both ears.

There is no deviation of the tongue to either side when it is protruded, and in other respects this organ is normal except as to taste which is impaired on the tip. Quinine and syrup taste the same on the tip of her tongue. The uvula is deflected to the left and the arch of the soft palate is higher on the left than on the right, but both sides respond well during phonation. A deflection of the uvula is not infrequent in the normal individual, and does not in this case indicate a lesion of the nerve supply to it. A coincidence in the case also is a diminished sensitiveness to palatal and pharyngeal reflexes.

To the electrical currents the response is as follows: On the left or stronger side a galvanic current of moderate strength produces normal contractions. To faradism the muscles respond, but only to a current stronger than required in health. On the right side the quantitative changes are also present—the anodal closing contractions being greater than the cathodal closing contractions, etc.

From a study of the electrical conditions present and from the clinical signs, it is quite evident that the palsy on the right side is more complete than that on the left, and probably will recover less rapidly and perfectly. Improvement on the left has been very marked during the last six weeks, while the right side had remained the same, and the appearance is now that of a right-sided facial palsy. Curiously enough, the ear disease has been more extensive and destructive on the left side, the side upon which the facial nerve has suffered the least.

Facial diplegia is a comparatively rare phenomenon, most cases occurring in advanced adult life. Of the causes ascribed to the condition, including middle-ear disease, disease of the nuclei, syphilitic, and other diseases of the nerves at the base of the brain, pontine disease, congenital affections, birth injury, cold, toxins, middle-ear disease is perhaps the most frequent cause. This is especially true of children, because they are predisposed to conditions which frequently give rise to middle-ear disease.

Among other causes operative in producing the trouble in childhood may be mentioned, diphtheria, which not infrequently is followed by a widespread polyneuritis in which the facial nerves may also share. Cold, too, an occasional cause of one-sided palsy, may affect both nerves. Gowers is inclined to regard this cause as rather infrequent in the adult. In the child, however, it relatively is a more common cause. Many children brought to clinics for treatment for the condition have no history of preceding ear disease, but do give a history of exposure to cold and the palsies are probably due to this cause. Occasionally, cases are reported in which the condition is congenital. Two instances of this rare phenomenon are reported in Johns Hopkins Bulletin, vol. 8, 1897, as occurring in brothers. The possibility of a double injury at birth by pressure of the blades of the forceps must be borne in mind, since a one-sided palsy from this cause is not infrequent, but, fortunately, of favorable prognosis.

An excellent description of the symptoms as they appear in a complete facial diplegia in advanced life is given by Wright in the *British Medical Journal*, 1869. He describes the face as totally devoid of expression, the cheeks hang in folds, and the lower jaw falls away from the upper, so that the patient is obliged to support the chin on his hand during the act of speaking and eating. The laxity of the subcutaneous tissues allows the lower eyelids to fall away from the eyeball, producing an apparent marked bulging of the eyes.

In childhood the changes are less marked because of an abundance of subcutaneous fat. The face is immobile but the normal outlines are fairly well preserved by the supporting fat.

The diagnosis offers no difficulties since there are no other conditions with which it might be confounded. The exact location, however, of the lesions is more difficult and must be determined as in a unilateral palsy, by the presence or absence of taste on the tip of the tongue, the amount of salivary secretion, the condition of hearing, etc.

The treatment primarily should be directed to the cause. In the case reported and in a great number of cases the aural disease must receive attention. When seen early, counterirritation by a blister back of the ear is indicated, and if pain is a prominent symptom small doses of salicylate of soda will prove beneficial. Iodide of potassium has been of service, and after the acute inflammation has subsided electricity will aid greatly to restore the muscles to their normal condition.

2136 Oxford street.

CARBONIC ACID GAS PER RECTUM IN PERTUSSIS.*

By C. Legrand Kerr, M.D.

REPORT OF SEVEN CASES.

THE object in the report of the following cases is to briefly bring before you a means of possible relief and alleviation in those cases of pertussis where there is a complication, or, more particularly, a drug intolerance. While the results have not been uniformly satisfactory, there has been enough success to warrant a more extended trial. Bergeon, the originator of this drugless method of treatment, and Rose and Norton, of Manhattan, have been the leaders in the experimental application of the method.

The technique in the management of all my cases was similar and as follows:

A wide-mouthed bottle of at least the capacity of 1 pint and provided with a tightly-fitting cork is perforated through its centre so as to admit a glass tube. This tube is adjusted so that the end reached half way up to the bottom of the bottle. To the external end of the tube is attached about 3 or 4 feet of flexible rubber tubing. To the free end of this is attached an ordinary hard rubber nozzle, convenient for rectal injections. The bottle is filled one-third with water, in which has been dissolved about 6 drams of bicarbonate of soda. To this is added about 4 drams of tartaric acid crystals.

The bottle is now kept stationary, and as the tartaric acid dissolves slowly the gas is liberated at the proper rapidity for administration. The rectal tube being inserted, the gas is administered for from five to ten minutes, according to age of child. Two or three treatments daily are sufficient, preferably given between meals.

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*Read before the Long Island Medical Society, June 5, 1900.

Ephraim explains the effect as the result of the increased quantity of oxygen which reaches the air vesicles, there to be exchanged for the larger amount of carbonic acid contained in the blood in consequence of absorption from the rectum.

CASE 1.—Male, aged 14 months; this was the only case seen in the first or catarrhal stage. The gas was given twice daily, and throughout the course of the disease the paroxysms were very light and varied in number from five to eight daily.

CASE 2.—Male, aged 8 months; number of paroxysms daily previous to treatment by gas estimated at about twenty-four or twenty-five. Vomiting was severe, and nourishment greatly impaired, so much so that there was danger in delay of treatment for sake of observation, and administration was commenced at once. On second day vomiting ceased and paroxysms were reduced in number to eight. From that time on they varied from six to ten daily.

In the following cases a placebo was given and the paroxysms carefully recorded for two days; the figures here given represent the number for each day.

Recognizing that the disease is self-limited, all observations as to the result of treatment were taken after forty-eight hours' trial, for I believe that to properly place the value of any given remedy in this disease we must get results within that time.

CASE 3.—Female, aged 16 months. Number of paroxysms forty-three and forty-one; vomiting very frequent; paroxysms short and not severe. The mother had been giving the child some cough mixture put up by the druggist. After second day of treatment by gas, paroxysms reduced to nine, thereafter varying throughout course of disease from six to eight.

CASE 4.—Male, aged 2 years. Number of paroxysms eleven and eleven; vomiting only about two or three times daily. Paroxysms all severe and exhausting. Result of treatment: No reduction in number of paroxysms but severity much less marked; no vomiting.

CASE 5.—Male, aged 2 years. Number of paroxysms 16 and 23, quite exhausting, but no vomiting. Treatment reduced severity and exhausting character of paroxysms and lessened number to 4 to 9 daily.

CASE 6.—Female, aged 3 years. Number of paroxysms 23 and 24. Vomiting very frequent, but not any marked interference with nutrition. Administration of gas reduced severity of paroxysms very materially and checked vomiting. The number was reduced to 4 and 9 daily.

CASE 7.—Female, aged 2½ months. This case was so very interesting that I give it more in detail. The child had been coughing spasmodically for 4 days when first seen by a physician. A sedative mixture was given, and three days later the child developed a broncho-pneumonia. The only record we have of the number of paroxysms was for 7 hours previous to my being called in consultation. From that record (8 in 7 hours) we estimated 28 in 24 hours. Each paroxysm threatened the life of the patient.

The pulse was 114 and very irregular. Respirations 87. Temperature 107.2 F. The administration of gas was commenced at once and repeated in 6 hours. The only other treatment during that time being application of a mustard paste, strength 1 to 4, over chest and repeated in three hours. At the end of 12 hours after the first treatment internal medication for the broncho-pneumonia was cautiously begun, there having been no vomiting for the previous 3½ hours.

At the end of the first 24 hours the paroxysms had been reduced from the estimated 28 to 19 and all were lighter in character. Three treatments were given daily. There was no vomiting after the first 8½ hours. In the next 24 hours the paroxysms numbered 8. On the third day 7; fourth day 7; fifth day 5; sixth day 7. Gas was reduced to twice daily and seances from 8 to 5 minutes on the seventh day. Eighth day 4 paroxysms. Ninth day no gas was administered and paroxysms increased to 11. From tenth day on, with gas administered, paroxysms varied in number from 2 to 3 daily. The broncho-pneumonia cleared up without any special incident. On the sixteenth day gas was stopped permanently.

Four days later this child died within a few hours from a meningitis, the exhaustion consequent upon the pertussis and broncho-pneumonia being a decided factor in the prognosis.

The only untoward effect noticed in any of these cases was a tendency to diarrhea in three of them, which I attributed to mechanical irritation. In all but one of them there was marked flushing of the whole cutaneous surface, lasting about ten minutes after each seance. The duration of the disease itself was uninfluenced.

97 Cumberland Street, Brooklyn.

THE TREATMENT OF SCARLATINAL NEPHRITIS.

By Robert Coleman Kemp, M.D.,
New York.

(Continued from Oct. 15, 1900.)

Length of Insertion of the Irrigator.—The rectal tube should be inserted one-third to one-half its length in prostatic cases, etc., and full length for high irrigation.

N. B.—Clinically the short tube inserted full length, and the patient with hips elevated, gives as good results as the colon tube for a high irrigation.

Position of the Patient.

Enteroclysis in the Dorsal Position on a Rubber Sheet and Without a Bed-pan. (Fig. 9).

A Kelly's pad can be employed, or a rubber sheet folded and arranged in gutter-shape to conduct the fluid that may escape into a foot-tub or basin. The patient should be brought to the edge of the bed, and the latter may be tilted by elevating the opposite side on two chairs. The rubber sheet should be covered with a Turkish towel and a wad of gauze or cotton placed just beneath the anus to absorb the leakage. The fountain syringe tube passes between the legs and is attached to the central tube of the irrigator. The curved outflow tube looks toward the edge of the bed, and to it is attached a long, soft rubber carry-off tube which passes into the receiving basin. The outflow tube passes beneath the thigh of the patient, and pressure on it is prevented by folding a large towel and placing it beneath the thigh at the lower third. The attendant sits on a low chair or stool and regulates the inflow and outflow beneath the bedclothes and without exposure of the patient. If the bed cannot be tilted the mattress can be holstered up beneath from the middle of the bed, giving an inclined plane to the outer margin. In case of shock or in any condition when it is inadvisable to lift the patient on a douche pan, this method is excellent. The foot of the bed may be readily elevated on blocks, bricks. or two chairs, if so desired.

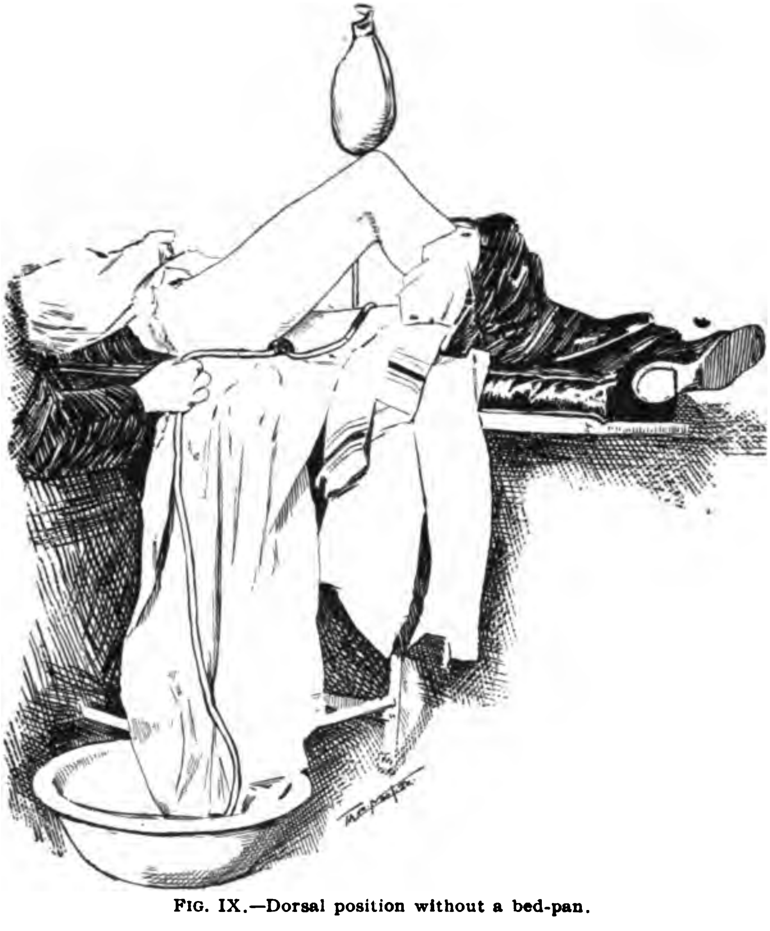


FIG. IX.—Dorsal position without a bed-pan.

Enteroclysis in the Semi-oblique (Half-Sitting Posture). (See Fig. 10).

Dr. William H. Thompson's method; this method was

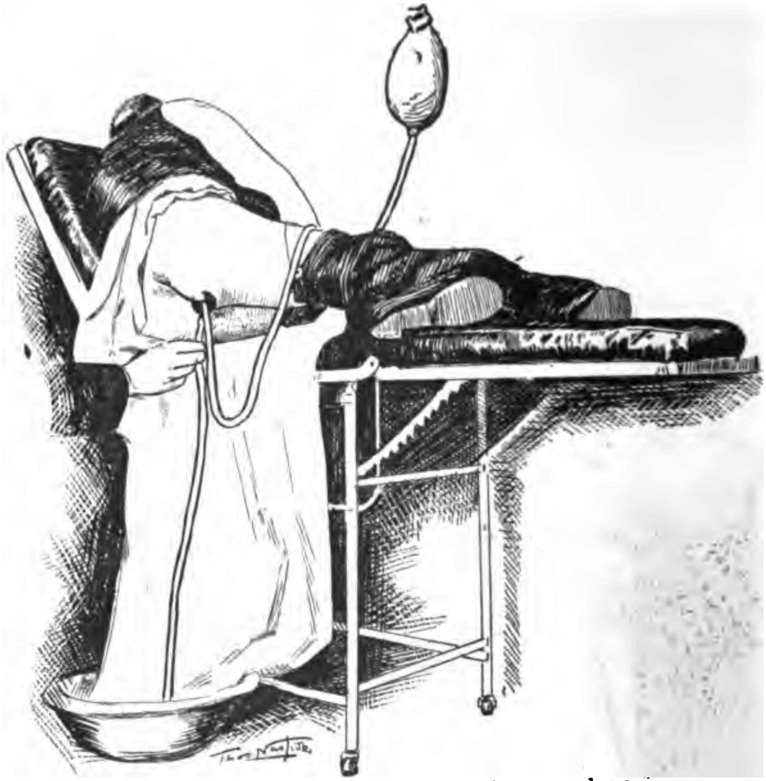


FIG. X.—Semi-oblique position in pulmonary edema.

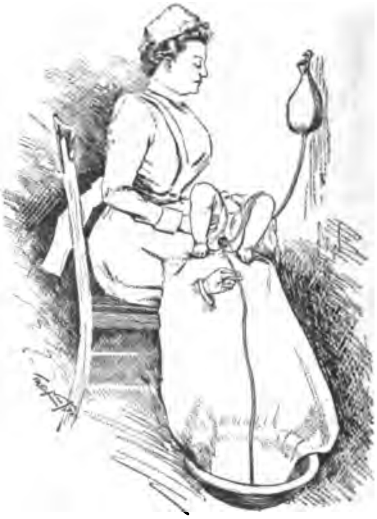


FIG. XI. Enteroclysis of infant

employed in pulmonary edema or pleurisy with effusion, due to oliguria. When on account of respiratory difficulty the patient cannot lie down, a rectal irrigation is given, the tube passed through a perineal pad and the latter held firmly to prevent the escape of fluid.

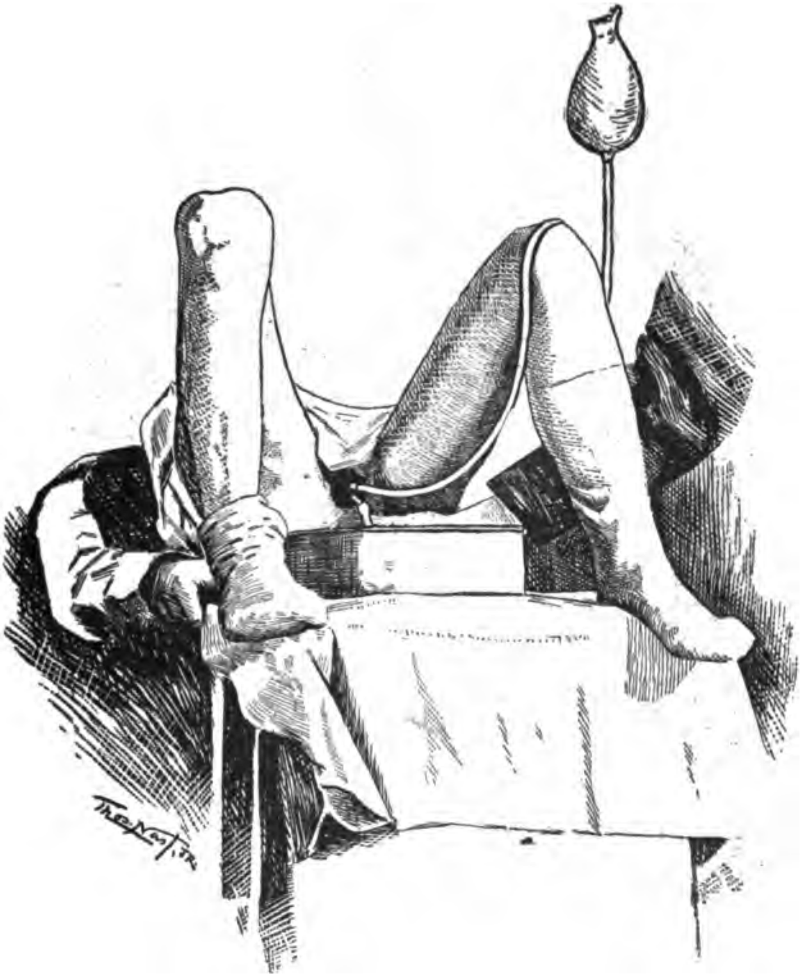


FIG. XII—Enteroclysis dorsal position on a bed pan.

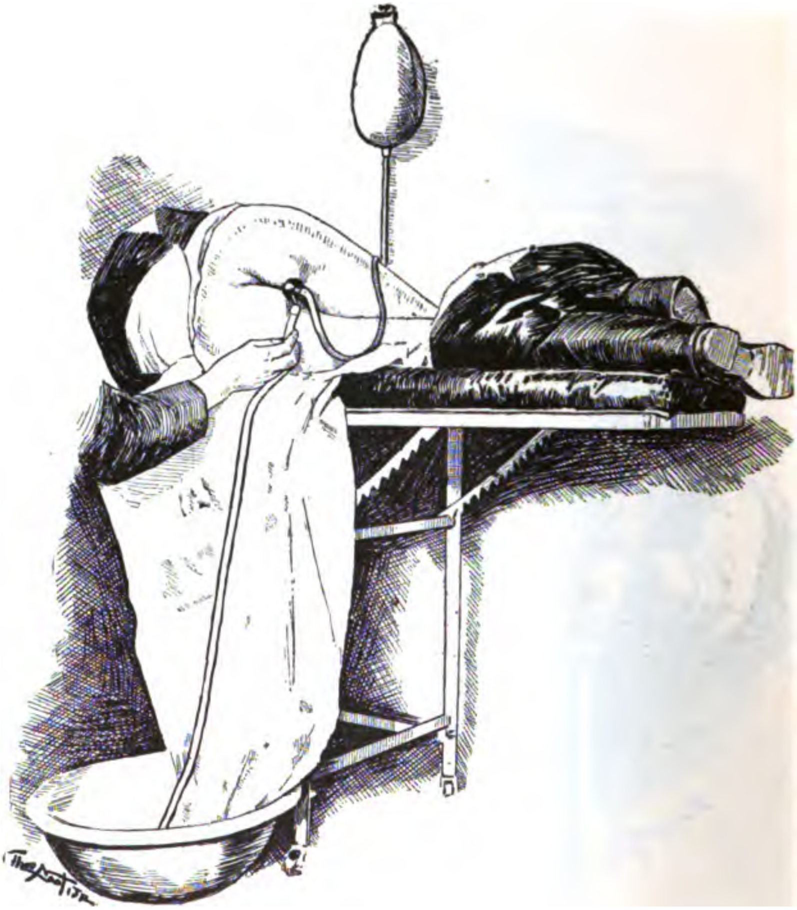
Enteroclysis of Infants. (See Fig. 11).

Gastro-Enteritis in Infants and Children.—Solution B. daily once or twice until return is clean, at 101°–104 F., employed successfully.

Dorsal Position on Bed-pan. (See Fig. 12).

Dorsal position—hips elevated, shoulders at lower level; on bed-pan, preferably a a douche-pan.

Enteroclysis in the Sims Position. (See Fig. 13).



FIF. XIII.—Enteroclysis in Sims position.

When there is tympanites or abdominal tenderness this position is unsatisfactory, as some tension and pressure occurs in the intestines and pain and cramps are liable to occur during irrigation.

Enteroclysis (Self-Irrigation in the Sitting Posture. See Fig. 14.)

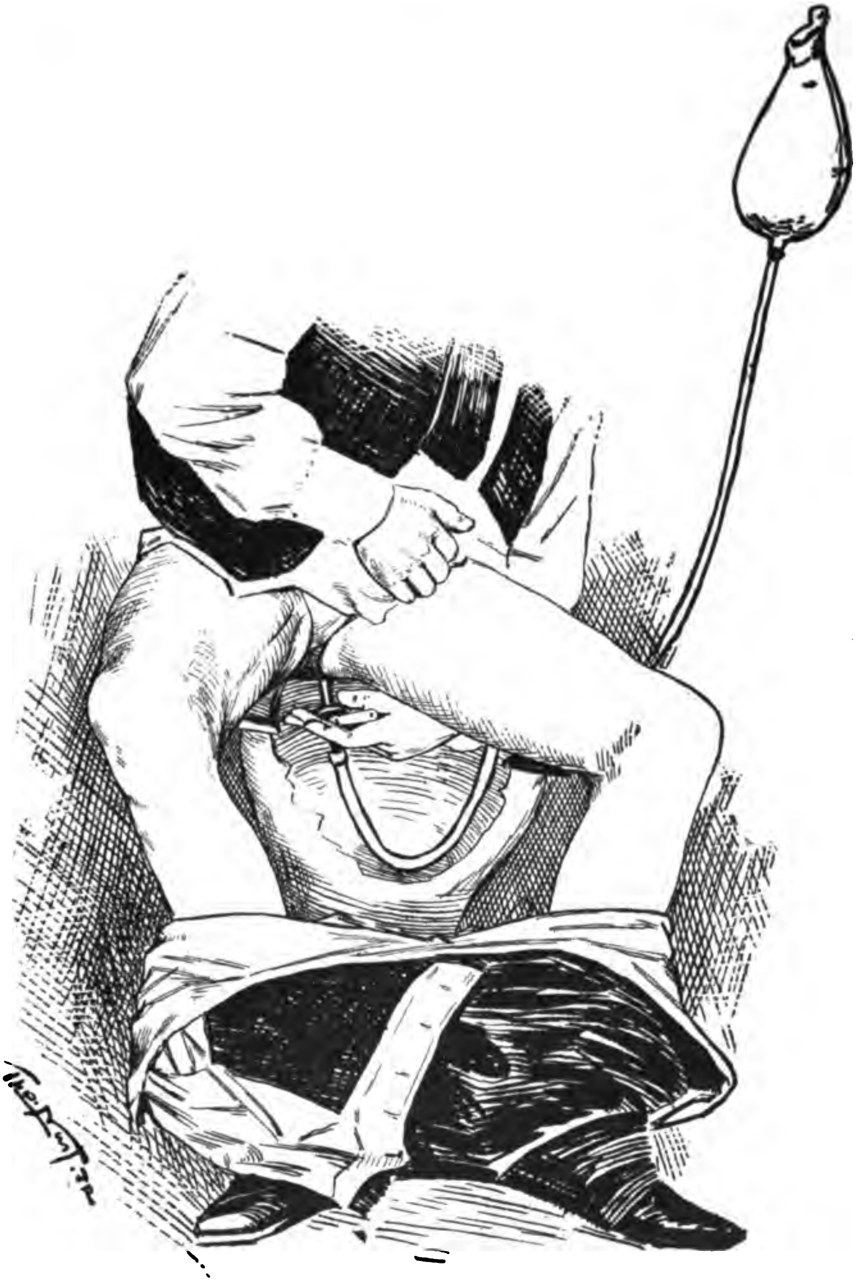


FIG. XIV.—Enteroclysis (self irigation) sitting posture.

In irrigation of the prostate or in convalescent cases suffering from oliguria from any cause, etc.

The method is as follows: Hang the fountain syringe about a foot above the patient's head and on the left side; attach the tube of the fountain syringe to the central tube and an inch of soft tubing to the curved (larger) tube of the irrigator. Insert the irrigator about ⅓ to ½ its length, the curved tube looking forward toward the perineum. The central tube of the irrigator passes between the middle and ring fingers of the left hand; the index and middle fingers support the curved tube of the instrument. The patient leans somewhat forward, as if to have a movement. The left wrist is supported by the left buttock. The index or middle fingers respectively regulate the inflow and outflow by bending a kink in the soft tubes. The clip is thus unnecessary.

Even rectal irrigation at this high temperature causes diuresis. Clinically, we have also observed as much as ℥40 of urine result from an enema of 9 ounces normal saline solution given in divided doses of ℥3 each, 1 hour apart.

Dr. Meltzer has found the salicylate of soda has a specific effect in producing diuresis and he advises it by continuous enteroclysis, 30 to 40 grs. in four to six quarts at 110°-120° F.

Cleaning the Irrigators.

To clean the stiff tubes unscrew the central tube and withdraw it.

To clean the flexible tube unscrew the accessory cap and loosen the main cap, meanwhile, holding the rubber fitting of the central tube firmly to prevent twisting the central linen catheter; push the caps along the central tube to nearly the end, then withdraw the hard rubber tip from the main outer tube and with it about half an inch of the central linen tube; then unscrew the tip, holding the catheter firmly just below it, then withdraw the central tube as in the hard rubber instrument. If the attempt were made to unscrew the flexible tube it would readily tear.

The flexible tubes should not be allowed to remain in any solution except for a moment, as the central tube readily softens and collapses. Should this occur, a wire passed through it generally remedies the difficulty. The central tube is often made of a linen catheter. I have found the flexible English catheter (such as has the stylet) much more durable. The ends do not fray as readily, nor does it crack as easily, and it is cheap. No. 7 is a good size; it can be cut in lengths to suit, and the hard rubber fittings will cut their own thread on it. A fresh central tube can thus be used in every case, and the outer tube and fittings can be disinfected.

(*To be continued.*)

EDITORIAL COMMENTS

The Etiology of Anterior Poliomyelitis

The resemblance in onset to certain of the acute infectious diseases together with the fact that this disease often occurs in groups of two or three cases has for some time past lead to the hypothesis of a specific organism as the etiological factor. That it often follows other diseases, most frequently diarrhea, scarlet fever, or measles, according to Holt, has lead to the belief in the minds of some that the degenerative changes in the anterior horns of the gray matter of the spinal cord are due to the toxins of various diseases. Others have been inclined to regard these changes as due to infectious embolism or thrombosis of the blood vessels. The fact that other diseases of the nervous system, such as meningitis or measles, have been observed in some individuals while others in the same locality were at the same time suffering from anterior poliomyelitis has lead to the hypothesis that these several conditions might be the results of the same cause acting on one or another part of the cerebro-spinal system. In a recent article on the etiology of this disease, Auerbach states that while only eleven cases were seen in the Frankfort Poliklinic from 1892 to 1897, between May and December, 1898, fifteen new cases were admitted. Two occurred on the same street at Frankfort. From the occurrence of cases in which there is extension of the changes to the brain, from the detection by Schultze, of the Weichselbaum-Jäger meningococcus in the fluid removed by lumbar puncture and from the occasional presence of acute meningitis always with the spinal changes, Auerbach is inclined to believe that meningitis, poliomyelitis, and encephalitis are often due to the varying intensity of action of the same micro-organism. T.

CORRESPONDENCE

NEW YORK, October 30, 1900.

To the Editor of PEDIATRICS:

SIR.—Dr. Alfred Meyer's courteous and judicious letter published in your issue of October 15th has disposed, to my certain knowledge, of the charges brought by your editorial of October 1st against the management of the library of the New York Academy of Medicine. It is supported and increased by the Fellows of the Academy, and the contributions donated by outsiders were collected by them—by them only—in the interests of the whole profession and the public at large. Indeed, the library is a public library; and your information did not seem to me to have been sufficient to justify an attack on one of our most beneficent institutions which should be the pride of our profession.

To what event the privileges of the Academy are recognized as universal is perhaps best proven by the lamentable case of a former Fellow who resigned his membership because he did not choose to pay dues for what he could obtain gratis.

For the generosity of the Academy, the medical and the lay public should have appreciation and gratitude. Medical men particularly should feel their responsibility and prove this sense of duty by becoming Fellows of the Academy, provided their standing in the profession and their years justify their admission and their means allow them to pay twenty dollars annually for a great personal honor and for the privilege of adding to the literary treasures, erudition and dignity of the profession at large by increasing and supporting the second medical library in the country.

Very respectfully yours,

A. JACOBI.
Chairman Board of Trustees,
N. Y. Academy of Medicine.

SOCIETY REPORTS

AMERICAN MEDICAL ASSOCIATION—SECTION ON DISEASES OF CHILDREN.

Annual Meeting, Atlantic City, N. J., June 5 to 8, 1900.

Fourth Day, June 8, 1900—Morning Session.

1. Dr. Louis Fischer, of New York, read a paper on **Athrepsia Infantum, Its Causes and Treatment; Proper Infant Feeding.**—Athrepsia arises from neglect of a gastro-intestinal catarrh. The author described the three stages of the disease, as given by Parrot, who introduced the name athrepsia. Henoch prefers the term atrophy. By far the greatest number of cases are found in bottle-fed babies, but there are many cases among breast-fed children on account of a deficiency of some nutritive element in the mother's milk. In such cases it is well to examine the breast-milk, and if it be found deficient, to withdraw it. Many such children will thrive if removed from the breast. If possible, a wet-nurse may be secured; if not, artificial feeding must be tried.

The treatment resolves itself into the removal of the cause, i.e., of the improper dietetic and hygienic conditions, and combating the intestinal catarrh. The blandest and least irritating food must be selected and frequent weighing must be resorted to in order to control the nutritive value of the food given. When the diarrhea improves, milk in some form may be allowed, peptonized milk being often useful in these cases. It is necessary, however, to modify the milk so that it will be borne nearly like mother's milk. The author gives in detail the principles of sterilization and milk modification. He suggests the addition of hydrochloric acid to the milk in order to render the casein more easily digestible. This is based on the experiments of Chittenden regarding the proteolysis of proteids.

The author's plan is as follows: Twenty drops of dilute hydrochloric acid are added to a half a pint of water and the mixture added to one quart of milk, slowly and well mixed. This mixture is boiled as quickly as possible. It is then set aside until another half pint with twenty drops of dilute hydrochloric acid is prepared. This is now added to the milk, thoroughly stirred and again brought to the boiling point. The result is a very palatable milk, without any traces of free hydrochloric acid, as shown by chemical test. He reports three cases in which breast-milk was found deficient, and hand-feeding was substituted with good results.

Dr. J. TRUMP, of Munich, sent a paper entitled **Intubation in Private Practice and its Perfection.** This was read by the Secretary. The general practitioner should practice intubation more extensively, for it is not an operation fraught with danger to the child, and not a procedure which is difficult to learn. In response to the author's inquiries fifty-five writers on the subject in Europe and America furnished their data concerning the mortality of cases before and after the introduction of antitoxin. The total number of intubated cases was 5,470. Before the introduction of antitoxin, in 1894, 35.54 per cent. of all intubated cases recovered, while after that date the percentage of recoveries varies from 60 to 100 per cent, averaging 82.4 per cent. for all cases recorded. The largest number of cases recorded (437) was reported from France and gave 39 per cent. of recoveries in pre-antitoxin days, while under serum-therapy 77.11 per cent. recovered.

Of 89 writers consulted by circular letter, 55 were in favor of the extended use of intubation in private practice, 20 had no experience with intubation, and the remaining 14 were opposed to intubation outside of hospitals on the ground that the after-treatment requires constant watchfulness and care that were impossible in private practice.

The writer shows that accidents are very much less frequent after intubation than the opponents of the procedure in private practice imply. Out of the whole number of cases collected only two deaths were caused by sudden obstruction of the tube, ten by spontaneous extubation, and one in consequence of a recurrence of the stenosis, after the tube had been removed, and in the absence of the physician. Trump believes that constant medical supervision after intubation is not necessary. The physician must watch the patient only until the immediate danger of asphyxia is removed, and then he can entrust the child to the care of competent nurses, who must not leave the patient. It does not matter what technique is used in intubation, so long as one succeeds in inserting the tube quickly and without injury to the parts. The choice of the calibre of the tube is an essential point. Small tubes are preferable for intermittent intubation (Huber), but large tubes prevent sudden occlusion and spontaneous expulsion, while they increase the danger of laryngeal ulceration. These dangers are obviated to a certain extent by the early use of the antitoxin, thus shortening the treatment, and also by the use of materials for the tubes, which will not corrode nor injure the mucosa. The author discusses the value of the various models and finds from the replies of intubators all over the world that O'Dwyer's tubes, or some modification of them, are preferred by the majority, while the short French tubes are not generally used.

In order to obviate the first danger,—spontaneous extubation, the tube should have a second bulge at the lower part, as O'Dwyer's latest tubes have. The second danger, sudden obstruction, is prevented by making the lumen of the tube as large as possible. The third danger, ulceration, is avoided by the use of hard rubber tubes, which are lighter, non-corrosive, and have the additional advantage that they are more firmly retained and less frequently coughed out. This opinion, as to the value of the rubber tubes was endorsed by the experience of Bokay, Bonain, Dillon Brown, Caille, Fischer, and Massei. Rosenthal, of Philadelphia, prefers metal tubes, because he had unfavorable experiences in 25 per cent. of the cases in which he used the rubber tubes.

The writer suggests the use of some flexible material in the manufacture of the introducer in order to avoid lesions produced by forcing the tube into the larynx. He also suggests the modification of the lower part of the tube in such a way that the lower swelling forms a perfect oval, the point of the obturator forming the apex of the oval. This will facilitate introduction. As the end of the tube often presses upon the anterior wall of the cricoid, owing to the fact that the latter forms an angle with the trachea, Bauer recommends the use of tubes that are bent backwards and in which the lower swelling is somewhat lowered to avoid pressure on the cricoid.

Trump recommends the adoption of this modification, but says that a lesser degree of curvatore than is advised by Bauer is sufficient, and that the swelling should not be lowered, as this change has not proven useful. His recommendations are based on theoretical considerations only, and are given to stimulate discussion.

3. Dr. Johann von Bokay, of Budapest, sent a paper entitled **Traumatic Injuries of Intubation, Their Prevention and Treatment.** which was read by the secretary. The author regrets that although the field of technique of intubation has been studied exhaustively, the injuries produced by the operation have scarcely received any attention, except by O'Dwyer, Variot, and several of his collaborators. He emphasizes the importance of entering thoroughly into the question so as to introduce intubation in preference to tracheotomy all over the world.

He observed 1,200 intubation cases since 1891,and divides the injuries into three types: First, Injuries which are produced during the act of intubation. Second, Injuries produced by the prolonged presence of the tube in the larynx; and, third, injuries produced by extubation. This paper deals only with the first of these, and the other two will be the subjects of later papers. The injuries are two-fold: Excoriations or abrasions of the mucosa, and production of false passages. Abrasions are of minor importance and need simply be mentioned. Among his 1,200 cases he met but four instances of false passage. He reports these in detail, with post-mortem findings.

When a false passage has been made, there is no relief of the stenosis, the respirations cease entirely in a very short time, and the tube can often be felt through the skin. He considers the prognosis of false passages unfavorable as a rule. Prophylactically, he advises thorough practice of intubation on dead bodies, cats, dogs, or manikins, before attempting it on living subjects. Bokay prefers to intubate with the patient in the sitting position, and advises that some aseptic and antiseptic precautions be taken before the operation, and dwells on the importance of skill,gentleness,and thorough knowledge of anatomy. He emphasizes gentleness as of special importance, as all cases of false passage were produced in intubating.

The treatment of false passage is immediate extubation followed by tracheotomy.

DISCUSSION ON INTUBATION.

Dr. William M. Welch, of Philadelphia, said that he had often felt that intubation in private practice differs in many respects from that in hospital practice. He has often wondered how a physician can give proper attention to his cases of intubation in private practice. In some cases in the hospital a child coughs up a tube as often as six times during the night, and this tube must be immediately reintroduced. He has seen two deaths in cases where the physician could not reach the cot of the child from his room in the hospital quickly enough. In private practice such cases must be more frequent. The best place for intubation is certainly the hospital.

As regards the size of the tube, we are, of course, guided by the scale made by O'Dwyer, but sometimes it is impossible to get the size suited to the age of the child into the larynx and we must use a smaller tube: later we may use the tube which is appropriate to the age of the child. Again, sometimes the size suited to the age is too small and the child coughs it up at once and keeps coughing it up, so that the next larger size must be used. The speaker had an instance like this just before he left home and he used a larger tube than was indicated by the child's age. It was very hard to get it in, but the tube remained in place. In regard to the choice between rubber and metal tubes, he said that he preferred the former. They do not give rise to chalky concretions, they are lighter, and yet they are not coughed out more readily than the metal tubes for weight has not much to do with the facility with which tubes are coughed out. As regards accidents, only one occurs in his hospital, and that is the blocking of the tube with a piece of exudate which has been pushed down in introducing. Of course, the tube must be extracted at once. These children will often expel a complete cast, and he remembers one case in which the cast reached beyond the bifurcation of the bronchi and was coughed up. If the exudate extends so far down, unless it is expelled intubation is of no avail; the exudate may return, even after it has once been expelled. In regard to false passages, he said that these may occur in inexperienced hands, but he has never seen this accident in the hands of resident physicians of the Municipal Hospital, of Philadelphia. In regard to injuries due to extubation, it is possible that if the beak of the extractor open beyond a certain degree it may injure the parts; but this can be obviated by fixing the thumb-screw. If the beak should be broken off in the act of extraction very serious results would follow, but he has never seen this accident. Very small tubes slipped down into the trachea in front of the extractor in two cases; in one of these tracheotomy was necessary; in the other case the child continued to breathe well, and coughed up the tube. In such cases, therefore, we must not be in too great a hurry to perform tracheotomy. Of course, if the tube had not been coughed up tracheotomy would have been necessary. As regards ulcerations from wearing the tube for too long a time, he has seen ulcers opposite the bulge in the tube and opposite the lower extremity. It is better not to let the child wear the tube longer than is necessary.

In speaking of the use of antitoxin, he said he was not so much in favor of the serum, as most of those present, because he had been somewhat disappointed in its use. It is scarcely right to compare intubation now and before the introduction of antitoxin, for the general use of intubation really came in with antitoxin; before that time tracheotomy was more largely employed. Intubation is also now performed earlier in the disease, and hence it is hardly fair to compare the cases which occurred in the pre-antitoxin era to those which occurred under the reign of antitoxin. All patients with diphtheritic laryngeal stenosis in his hospitals get antitoxin if they live long enough after they are admitted, but in few cases only he can make comparisons. In 1895 his hospital depended on the scanty supply of antitoxin from Germany. During that year about half of the intubation cases received antitoxin, and there was a difference of 3.29 per cent. in favor of the cases that had received the serum. In that year he limited the use of antitoxin to the first, second, third, and fourth day of the disease, when there seemed to be a fair chance of recovery. The death rate in his hospital was not much below 17 per cent. Last year (1899) the death rate in intubation cases was 58 per cent., and in 1895 it was a little lower, about 56 per cent., with a difference in favor of the antitoxin cases of 3.39 per cent., as was stated before. In other years the death rate of intubation cases was between 60 and 70 per cent. In 1894, before we used antitoxin, it was 75 per cent., but during that year diphtheria was more fatal all over the world.

Dr. Lee, of Pittsburg, Pa., said that he agreed with Dr. Welch as to the dangers of intubation in private practice. A competent nurse should be in constant attendance in such cases and she should be trained to act promptly in the case of emergency. In his experience intubation has not been as satisfactory as generally reported. When the membrane extends below the tube with stenosis the stenosis is often not relieved and occasionally a cast was coughed, but yet the symptoms continued to get worse. He began to use the antitoxin very early. All his intubation cases except two recovered. He knows a physician who had a death rate of 40 per cent., but he thinks that this was due to the fact that antitoxin was used too late. He believes that the mortality is much lower now.

Dr. A. Campbell White, of New York, said that before the use of antitoxin about 50 per cent. of croup cases were saved, but only a portion of these were intubated, as at that time intubation was only used as a last resort. At that time there was a high mortality in the intubation cases, but the death rate was somewhat better in other croup cases. Now intubation is performed early in all cases as soon as stenosis becomes well marked. In New York intubation was generally used before the introduction of antitoxin. One thing we must not forget, and that is that we never see any figures against antitoxin, although we may see figures that are not very much in its favor. In fact, one cannot judge by statistics, but one who has seen a great deal of diphtheria in the preantitoxin days, and then with antitoxin, now sees things that he has never observed when we had no antitoxin. A child with a severe case of diphtheria, accompanied by sepsis, is given a dose of antitoxin, and is often found apparently perfectly well on the next day. He remembers a case in which the patient was brought into the hospital, intubated, and given antitoxin before a group of students who happened to be present at the bedside instruction. The child had come in looking desperately ill, but before the students had left the hospital they saw that child sit up in bed, apparently better. This made a great impression on the students, and yet that child died of sepsis in a few days· Of course such cases do not occur now, because the antitoxin is given early.

The speaker has never seen a false passage in intubation, but has heard of cases in which the pseudomembrane was pushed down with the tube, and thus blocked the lumen. Tracheotomy is usually necessary at once in such cases, and even then we may not be able to save the child. He thinks the cases in which the membrane extends into the brenchi are relieved by intubation, that is the dyspnea is relieved, but these patients generally die of septic pneumonia. The tube used in intubation should be large enough in all cases, and if it is pushed through the trachea, tracheotomy should be performed, and then the tube is removed with difficulty, for it turns about in the trachea. Such tubes are coughed up once in a lifetime.

Dr. LOUIS FISCHER, of New York, said that in New York intubation was rather extensively used ten years ago. He calls a case of septic diphtheria a case of septicemia, and treats the general condition, not the local. There are some forms of diphtheria in which there is really an overwhelming of the systrm with poison, and in these fatal cases it is no use to give antitoxin. As a rule he gives 3,000 units on the first day, then if there is no effect in twenty-four hours he gives another dose, and if this does no good he uses other remedies. He thinks that the cause of death in fatal cases of laryngeal diphtheria is mixed infection, and that therefore the diphtheria antitoxin does not have any effect in these cases. To illustrate the force of public opinion as regards the use of antitoxin, he said that Kassowitz told him, when he was in Vienna, that they used antitoxin in Kassowitz's clinic because the public demands it. He also would recommend the use of the solid antitoxin in preference to the liquid, as in his experience it was more efficient.

The occurrence of calcareous deposits is the main objection to the metal tubes. Even with the use of the rubber tubes decubitus may occur if the tube remains long enough in larynx. The speaker related a case in which there was a large retropharyngeal abscess which caused dyspnea, and in which he was called in to intubate. This shows the necessity of a careful diagnosis in all cases of laryngeal stenosis. Another case in his practice is interesting on account of its duration. This was a syphilitic stenosis of the subglottic region which lasted seven or eight months, and finally required tracheotomy. He condemned the practice of forcibly extubating by hooking the finger behind the tube, for this is is a source of traumatism. We have all seen the spontaneous expulsion of a tube when the swelling disappears. The grasp of the tube on the larynx is lessened, and the tube is coughed out. In order to prevent the blocking of the tube by membrane, he makes a practice of injecting 1/100 to 1/60 grain of apomorphine in cases where the membrane seems to be very abundant.

Dr. Rosenthal, of Philadelphia, agrees with Dr. Welch about the question of statistics. More intubation is practiced to-day than ever before, so that statistics are now better than they used to be because intubation is used earlier and oftener. Statistics of laryngeal diphtheria must include cases that did not require intubation. The cases of diphtheritic laryngitis following measles gave 100 per cent. mortality before the introduction of intubation, and now give about 97 per cent. He has had discouraging experience with rubber tubes,—all the patients in whom he used them died. He finds that calcareous deposits occur in rubber tubes also. The possibility of the expectoration of a tube is a drawback in private practice. In such cases he uses a larger tube, and if that is coughed up he continues to increase the size of the tube until it is retained. Unfortunately, these patients have to wear a tube which is larger than usual. In such cases he also uses large doses of strychnia as a prophylactic against paralysis. In Italian children the larynx is somewhat larger than in other nationalities, and a larger tube is required. On one occasion he broke the screw of the introducer and was obliged to intubate with the extractor. As a precaution he always examines the beak of the extractor to see that it is in good condition before extubating, and he sets the measure of the opening of the beak to the required distance. In intubation constant practice makes perfect. Extubation must be rapid, and the way to do is not to feel around for the opening in the tube, but simply for the top of the tube, and then to open the extractor. He does not leave any silk thread attached to the tube in his practice. As to the complications, he thinks that in measles it is not the stenosis that kills, but the septic pneumonia, and these cases die of lung complications with or without antitoxin. There is a peculiar marasmus which follows laryngeal diphtheria after the tube is taken out. The child gets very weak, paralyses occur, and sometimes death from heart failure six weeks after the tube has been removed. Of course, these cases really belong to the mortality record of diphtheria.

Dr. Welch, in closing, said that he has had a great deal of unpleasant eqperience with croup in measles, for the children almost invariably die. Do they die of diphtheria? The Klebs-Loeffler bacilli are found sometimes, not always. In such cases intubation overcomes the stenosis, and yet the child dies. He was able to save one or two such cases in the hospital, however. The stenosis in these cases is not due so much to the formation of diphtheritic exudate, but to the intense congestion of the mucous membrane of the larynx. The speaker cited two cases of croup following measles. No Klebs-Loeffler bacilli were found in these cases, and intubation relieved the dyspnea, but they could not get along without the tube. Tracheotomy was tried on one of the children, and the tube was removed. This child grew weaker and weaker, the circulation failed, and the child died. The other still lives; has worn the tube now for over a month, but an attempt to remove it was not successful, for the child became livid immediately. These cases are very troublesome. Last year he saw one that remained in the hospital for almost a year. The tube was removed after a month, but the stenosis returned afterwards on account of ulceration, and he could not get a "one year old" tube into the larynx. At the end of the year the child was transferred to another hospital for operation, and preparatory to opening the larynx tracheotomy was performed. The child unfortunately got measles and pneumonia and died.

4. Dr. F. C. Valentine, of New York, read a paper en Surgical Circumcision. He discusses two questions: (1) How should circumcision be performed. (2) Who is to per-

form it. The preparation of the field of operation is naturally the same as that employed for other surgical procedures. Anesthesia is usually necessary. The choice between local and general anesthesia is governed by the age and condition of the patient. As a rule, general anesthesia should be employed in all children under the fifth year, provided no cardiac or pulmonary condition prohibits. General anesthesia may also be necessary in children who are hypersensitive through being pampered by the mother. The author does not give the details of the technique of the circumcision, but refers those present to his recently published book on gonorrhea. He distributed illustrations of the procedure as they appeared in this book. In speaking concerning the question as to who shall perform the operation, he states that in his opinion none but physicians should be permitted to perform circumcision, and points out the dangers accompanying the Jewish ritual act from neglect of antiseptic precautions, of means to arrest hemorrhage, and of preventing infection from the mouth of the man who performs the religious rite. The author does not want to be understood as inweighing against the usefulness of circumcision in infants. The fact remains that venereal diseases are less common in those who have undergone the operation at an early age. The rights of individuals to the free exercise of religious liberty would be in no wise infringed if the operation of circumcision were performed by physicians. If for the sake of religious sentiment devout Jews desire to have their babes circumcised by none but Jews, there are many Jewish physicians who could become Mohelien, or ritual circumcisers, and who then may conduct the operation as modern aseptic surgery demands.

FOREIGN PEDIATRIC JOURNALS.

Abstracts of all Original Articles that Appear in Foreign Journals Devoted to Pediatrics under the direction of George Alexander Saxe, M.D.

ANNALES DE MÉDECINE ET CHIRURGIE INFANTILES, JULY 15, 1900.

(*Cotninued from November 1st issue*).

2. **Gastro-Intestinal Hemorrhage in the Newly-Born.**—By E. Perier. The child was born 17 hours after the premature rupture of the membranes. On the third day he began to vomit blood, and on the following day he passed bloody stools, and became visibly pale. Ice was applied to the abdomen, and ice water with a few drops of acetic ether was given internally. On the following day 10 cc. of artificial serum were injected subcutaneously, but the hemorrhages continued. The child was now somnolent, very pale; the surface cold. Nursing was stopped, iced alkaline mineral water given instead, and artificial serum injected twice daily; half a drop of tincture ferri chlorid was given every two hours; the limbs rubbed with a hot turpentine liniment and wrapped in cotton. On the next day the hemorrhages ceased, but the injections of artificial serum were continued.

3. **Hippocrates Regarded as a Pediatrist.**—By W. Troitzky (concluded).

4, **The Continuity of the Toxic Process in Fatal Cases of Diphtheria.**—By John Biernacki. (Reprinted from the *British Medical Journal*, January 27, 1900.) In a previous article (*Annales de Med. et Chir. Inf.*, 1900, No. 6, p. 185) the writer has shown that non-complicated cases of diphtheria present a sufficiently constant group of symptoms. These are: pallor, progressive prostration, irregularity of the pulse, coldness of the surface, oliguria or even suppression, sense of oppression and pain at the precordium, hypothermia, nausea and jactitation. The intelligence remained unimpaired until the end. The present article deals with a study of the blood pressure in diphtheria. Some years ago Roux and Yersin found that the subcutaneous injection of toxins produces dilatation of the bloodvessels and a fall in the blood pressure. Brodie confirmed these experiments and found that the blood pressure gradually rises again, but falls once more before the death of the animal; the heart continues to beat vigorously until death.

A clinical study of the blood pressure by the present writer showed that first the curve oscillates around the normal point, then there is a slight fall of pressure, and finally a rapid fall which persists until death.

The duration of these three periods varies according to the duration and intensity of the disease. A study of the excursions of the blood pressure shows that during the second period the heat beats with normal vigor, and hence the fall of blood pressure is due vaso dilation; on the other hand, in the third period the fall is due both to vaso dilation and to failure of the heart muscle. It is during this period that the symptoms due to heart failure develop. In the last stage it is possible that some secondary toxic process is joined to the diphtheritic—possibly uremia supervenes, but its presence is not necessary to account for the symptoms. The author reports a rapidly fatal case in which he observed the blood pressure curve, and found it to be similar to the more prolonged cases. Sometimes paralysis is the cause of extreme weakness of the heart in diphtheria, and even then the fall of blood pressure, if it is not too rapid, will give rise to the symptoms indicated. In such cases dyspnea is a very prominent symptom. The form of dyspnea which results from a sudden paralysis of the respiratory muscles and also sudden syncope from exertion are also intrinsic causes of death in diphtheria.

The oliguria is explained by the fall of blood pressure. The absorption of toxins from the kidney, the weakness of the heart, the vomiting and the diarrhea all contribute to lower the pressure. Albuminuria is not always present in fatal cases. In the cases in which anuria supervenes at the last moment the suppression cannot have any influence on the general symptoms, but in prolonged cases uremia may be considered as a secondary factor, and in these cases there is always myosis. It is possible that the aggravation of the nausea is also due to uremia; on the other hand there is no coma, no convulsions. It may be assumed therefore that the primary (diphtheritic) toxin counterbalances or neutralizes some elements of the uremic poison, thus maintaining the continuity of the first group of symptoms.

ANNALES DE MÉDECINE ET CHIRURGIE INFANTILES, AUGUST 1, 1900.

1. **Collective Investigation Concerning the Prophylaxis of Diphtheria.** This notice was issued at the suggestion of Professor Jablockow, of the St. Sophia Hospital in Moscow. The following is the list of questions to be answered by those who took part in the investigation:

1. What bacteriologic method do you employ in order to obtain a positive diagnosis of diphtheria?
2. Do you consider the bacillus of pseudodiphtheria a special, distinct species or only an attenuated form of the true diphtheria bacillus?
3. What importance do you attribute to the finding of Klebs-Loeffler bacilli in the mouths of healthy individuals?
4. Upon what do you base the determination of the period of isolation of diphtheritic patients?
5. Do you favor the estabiishment of special institutions for the reception of convalescent diphtheria patients because the bacilli of diphtheria

are found in the throat for a long time after the disappearance of the clinical symptoms?

6. Do you consider necessary the isolation of healthy individuals (in the family or in the school) in whose throats the bacilli of diphtheria are found?

7. What special prophylactic measures do you prefer to adopt during epidemics of diphtheria in families, schools, hospitals, etc.?

The collaborators are not limited to these seven questions, but the editor will be grateful for any other information that may be sent to him on the subject.

Professor Ausset, of Lille. 1.—Examination of the cultures from the throat, and in doubtful cases inoculation into animals. 2. Believes that our present knowledge will not permit us to exclude diphtheria when the short pseudo-diphtheria bacilli are present. In such cases he uses inoculations into animals as tests. 3. No importance to be attributed to bacilli in the mouths of healthy persons. Has found them twice in his own mouth and has never infected anybody. 4. Isolation at least for eight days after the disappearance of clinical signs, and during this time disinfection of the mouth with 25:1000 Labarraque's solution, and of the nose with mentholated oil 1:100. 5. Such institutions would be luxuries. It is useless to isolate healthy persons in whose mouths there are bacilli. They may be isolated just long enough to get the results of the inoculation. 7. Registration may be prescribed in school epidemics. The parents should also be instructed to have preventive doses of antitoxin given to the children who have been exposed, and also to disinfect the mouths with some antiseptic solution, such as Labarraques. In epidemics in families the same measures should be adopted. In hospitals epidemics should not occur with proper management.

Professor Haushalter, of Nancy.—1. In most cases examination of the exudates is sufficient. In doubtful cases inoculations into guinea pigs are necessary. 2. Pseudo-diphtheria bacillus seems to be a distinct variety, as it can not be rendered virulent. 3. Individuals who carry the virulent germ in their mouths are dangerous, but it is difficult to say whether those who carry the non-virulent germs are also possible sources of infection. 4. Theoretically, until no more bacilli are found in the throat. In the country, where bacterial examinations may be impracticable, two weeks after the disappearance of clinical signs is a safe rule. 5. Such institutions would be very useful in large cities. 6. Isolation of such individuals is very difficult to enforce in practice. Theoretically, it is necessary if the bacilli are virulent. 7. Early isolation of the patients, prolonged isolation of convalescents, and disinfection.

Professor Mongour, of Bordeaux.—1. Examination of cultures on serum-gelatin. 2. As attenuated forms of the true bacillus. Grave cases of diphtheria always showed the presence of long bacilli in cultures. 3. The presence of Loeffler bacilli in healthy mouths is of no more importance than the presence of pneumococci and of certain bacteria that are normally present in the intestines. 4. Isolation should cease when all local symptoms have completely disappeared, and when general health is re-established. 5. The practical impossibility of maintaining such establishments, and the impossibility of testing the virulence of the bacilli in the mouth of each patient every day. 6. Does not consider the isolation of healthy individuals with bacilli in the mouth when there is no local reaction. 7. Isolation of the healthy persons in case of an outbreak in any school, etc., until the rooms have been disinfected with sulphurous acid or with formol.

Drs. Martin and Revilloid, of Geneva.—1. They prefer Gram-Nicole's method of examination for cultures. 2. These bacilli are a saprophytic transformation of the true Loeffler bacillus. 3. Bacilli in mouths of healthy persons, if virulent, are or may become dangerous for the person carrying them or for those with whom this person may come into contact. 4. They wait until the clinical signs disappear completely, and until the bacilli disappear from the throat of the convalescent. 5. They have not felt the need of such establishments at Geneva, but there can be no objection to such institutions. 6. Yes, the only obstacle being the difficulty of this examination which, in order to be of value, must include all the school children. 7. Isolation, gargles with salicylic acid 1:100 for healthy persons, scrupulous cleanliness of the latter and of all those who surround them, disinfection of the rooms, and preventive injections of serum. In one establishment thirty-two children were thus inoculated prophylactically because a case of diphtheria appeared among them. No other child became infected.

Professor Combe of Dausanne. 1. The exudate is examined immediately, and if long or medium-sized bacilli are found, antitoxin is given. A culture is also taken and examined when the colonies develop in order to confirm the diagnosis. Roux's antitoxin with or without antistreptococcus serum is used. 2. This question has not yet been settled by bacteriologists, but his impression is that the pseudo-diphtheria bacillus is an attenuated and non-virulent form of the true Loeffler bacillus. 3. Diphtheria bacilli are very often found in the mouths of healthy persons, and are evidently non-virulent in many cases. He is studying this question at present. 4. It is useless to wait for the total disappearance of the diphtheria bacilli, as this may take ten months. The clinical disappearance of the disease is a safe guide. The duration of isolation in his hospital is only three weeks. 5. Such institutions would be very useful, and anemia, postdiphtheritic paralyses, etc., could be advantageously treated in such hospitals. 6. Collective investigations by school and barrack physicians would be of value in determining the normal flora of the throat, but the result, in the opinion of the writer, would show the impossibility of realizing the desire expressed in the question. 7. Isolation of the patient, exclusion of sisters and brothers from school for ten days, disinfection of the sick-room. He reserves the preventive inocculation to hospitals and schools in which epidemics have broken out, in view of the fact that Roux's serum only immunizes for fifteen days.

Professor Escherich of Graz. 1. Examination of the membrane with Loeffler's methylene blue solution in all cases; if many bacteria are present the methods of Gramm or of Weigert are used. In case of doubt, cultures are taken and the growth examined. He uses Loeffler's blood serum, makes at least three cultures, and examines after eighteen to twenty hours. 2. Believes that a whole series of bacteria which resemble the Klebs-Loeffler bacillus morphologically are grouped under the name of pseudo-diphtheria bacillus. The chief differential factors are the grouping, the character of the culture on agar, and the formation of acids in broth. The virulence of the true bacillus in animals is not, in his opinion, a differential factor of sufficient value, for the true diphtheria germ may lose its toxic powers under certain conditions. 3. Such bacilli must be considered as true diphtheria germs, but they are found in the mouths of persons who are rather immune or refractory to the infection, and therefore the germs act as saprophytes. 4. In practice the patients are discharged from the hospital five to eight days after the disappearance of the clinical symptoms, without any preliminary bateriologic examination. · The disappearance of the germs may be hastened by the use of local antiseptic solutions, for example by means of a spray of sublimate solution. 5. Such establishments are superfluous, because convalescents may be kept at the hospital until all infectious processes disappear, and preventive inoculations may be administered to all persons who have come in contact with the patient. 6. He has seen but few cases in which the diphtheria bacillus was found in the mouths of healthy persons, but such individuals should be treated in the same way as convalescents from diphtheria. 7. Preventive inoculation of serum is the sovereign prophylactic measure, and if employed judiciously, never fails.

Professor Hellstrom of Stockholm. 1. Diagnosis of the bacilli is made by examination of cultures on serum. 2. The pseudo-diphtheria bacilli (short) seem to be a variety of the true bacillus, because they are often found in persons surrounding diphtheritic patients, as well as in convalescents, but they never spread diphtheritic infection. 3. Noncommittal. 4. and 5. At the Hospital for Contagious Diseases at Stockholm patients are usually kept isolated until the bacilli disappear from the throat. If they persist too long, the custom is to discharge the patient after about five or six weeks, but the writer has noted that the disease was spread in several instances by such persons. 6. Yes, isolation of healthy persons with diphtheria bacilli in the mouth is very desirable, but practically impossible to enforce. The bacilli in such mouths are not always virulent, and we do not know in what circumstances they become dangerous. 7. With very few exceptions all the cases of diphtheria in Stockholm are treated in the new Hospital for Contagious Diseases, and the rooms which they occupied before admission are properly disinfected.

2. **Treatment of Pott's Disease with Cacodylate of Sodium.**—By RAOUL BAYEUX. In a case of rapidly progressing tuberculosis of the spine the writer used cacodylate of sodium with very successful results. The child was eleven years old and came to the writer complaining of *pain in the back*. On examination she showed a lateral curvature and a kyphosis of the angular character peculiar to Pott's disease. Pressure on the angle of the deformity, which was situated at the second lumbar vertebra, gave rise to acute pain, and pain was also felt on pressure upon the anterior aspect of the spine through the abdominal wall. The body was stiff dur-

ing walking, and when the child was asked to pick up an object from the floor, the spine was held immobile and the knees bent. The diagnosis of Pott's disease was made. The plaster of Paris jacket which was applied was well borne for a few weeks, but soon the dorsolumbar pain became worse, especially when lying prone. The jacket was removed and a zone of redness was noted around the gibbosity, indicating that the kyphosis increased progressively. Another jacket was applied with an oval aperture at the region of the kyphosis. Two weeks later the pains reappeared, and the jacket was again removed. The writer found that a second gibbosity had developed underneath the first, corresponding to the third lumbar vertebra. The skin over the kyphosis became ulcerated, the region around the vertebral column became swollen, and the pain became worse. The classical treatment was thereupon abandoned, and cacodylate of sodium was administered, three centigrams daily in three doses for a week, during which time the child was placed immobile on a hard horizontal bed. After an interruption of two weeks, the treatment with cacodylate was resumed; after eight days the local symptoms were distinctly improved, the movements of the spinal column became free, and since then there was a rapid improvement in the general as well as local symptoms. A month of this treatment with sodium cacodylate, therefore, arrested a tuberculous process in the vertebral column. The author hopes hat further experience with this drug will confirm his result, and that it may prove valuable in various forms of tuberculosis of the bones and oints.

3. **Rachitis.**—By Louis Spillman. (Analysis of a Nancy Thesis). The writer investigated the bacterial relations of rachitis with a view of finding the true cause of the disease. As the result of a laborious research, comprising 127 experiments on animals, the author concludes that he has found nothing to prove the existence of an ordinary localized infection in rickets. His researches failed to reveal any specific infection in this disease, and the most important casual factors clinically speaking appear to be digestive disturbances. Experimentally the results of inoculation of extracts of fecal matter seemed to give the most promising results. He concludes that there is probably a specific infection emanating from the digestive tract, which provokes the lesions of the bones in rickets.

DER KINDERARZT, August, 1900.

Concerning the Use of Citrophen in Pertussis.—By Albert Feuchtwanger. The numerous remedies which have been employed heretofore in pertussis have not given entire satisfaction, and therefore the clinician must be on the lookout for new drugs which may prove more efficient. The writer has seen good results from the use of tussol, but in many cases an antipyrine rash occurred, even after the administration of small doses of this preparation. In citrophen he has now found an efficient substitute for tussol.

Citrophen is phenetidin citrate, and is fairly soluble in water. He reports the results of 40 cases of pertussis treated with citrophen. The drug is taken very readily by children, and is very well borne. The paroxysms of cough are very quickly relieved, usually diminish in number on the second night, and disappear almost entirely on the succeeding nights. The cough increases in severity as soon as the remedy is withdrawn. Although he has given it for weeks in all his cases, he never saw any toxic effects from citrophen. His impression is that the drug shortens the duration of pertussis to some extent. The dose for infants is 0,1 grams, in children from one to three years old 0,15 to 0,3 and in older children 0,4-0,4 three times only. The writer adds that he does not consider his own experience sufficient to establish the value of the pertussis. Its true value can only be determined by further clinical reports.

PEDIATRIA, July, 1900.

1. **Intestinal Antisepsis in Children.**—By. F. FEDE and G. GALLO DE TOMMASI. (A paper read at the Thirteenth International Medical Congress, Paris, 1900). The writers conclude their experimental and clinical study of this subject as follows:

(1). In all pathologic conditions with auto-intoxication and auto-infection from the gastrointestinal tract, whatever may be the severity and symptomatology, some internal intestinal antiseptic may be given with advantage. The best representative of this class of remedies, according to their experiments, is calomel in fractional doses.

(2). The best results in the use of internal antiseptics are obtained by early administration of these remedies, i.e., when the toxins have not yet had time to invade the whole organism and to poison the nerve centers, thus disturbing the organic functions.

(3). The writers counted the number of bacterial colonies found in cultures before and after the administration of the antiseptics. They found, for example, that they counted in one case 1,050 colonies before and only 40 after the use of calomel. They also observed that the administration of this drug was followed by a diminution of the virulence of the cultures and diminution of the compound sulphur acids in the feces.

(4). They studied the relative efficiency of (*a*) salol, in doses of 5 to 10 centigrams up to 0,50–1 gramme per diem; (*b*) tincture of iodine, 10 to 15 drops, according to age, in a mucilaginous mixture, a teaspoonful every two hours; (*c*) calomel in divided doses of 1-3 centigram up to 12 centigrams per day. The last-named drug was found to be the most efficient of the three.

2. **A Case of Barlow's Disease.**—By FRANCESSO CIRNA. The writer's conclusions are as follows: The present case is one of Barlow's disease in an infant nursed exclusively at the breast. The nutrition was, however, insufficient. The negative result of the bacteriologic examination, which was instituted for the purpose of finding the etiologic factor of the disease does not exclude the possibility of the existence of a specific agent, but simply shows that the proper means and conditions for finding this agent are still lacking. He considers the disease as a special biochemic process of the infantile organism due to a defect of some necessary elements of

nutrition and to the formation of special toxins. The change in the blood in Barlow's disease are not characteristic, but as in other forms of hemorrhagic disease concern principally the hemoglobin.

3. **Abdominal Faradization in Summer Diarrhea of Infants.**—A preliminary communication by Dr. DURANDO DURANTE. The writer reports the results of the use of the faradic current in summer diarrhea in ten cases and concludes that in certain cases of summer diarrhea the faradization of the abdomen produces very satisfactory results. These cases are what should properly be termed actual diarrhea, namely, the diarrheas due to the influence of the summer heat and not to anatomic or functional lesions of the gastrointestinal tract, in other words, a true summer diarrhea is a functional diarrhea. In this form the faradic current gives very marked benefit. The writer admits that errors in diet are the most frequent causes of summer diarrhea, but in many cases these affections occur in breast-fed infants who are properly nursed, and in these we are forced to say that the summer heat is responsible for the trouble. It is sufficient to transport these patients to a cool, elevated plane to produce a cessation of the diarrhea. The writer believes that the heat favors fermentation, not directly, but by its influence upon the nervous system, so susceptible in infants. The disturbances in the nervous apparatus of digestion cause the accumulation of fermenting food in the bowels. Hence faradic stimulation of the nerves of the intestines removes the ultimate cause of the diarrhea and thus brings about a cure. The following simple technique is used: The electrode, consisting of a metallic plate 5 or more cm. in diameter covered with felt steeped in salt solution, is placed on one side of the abdomen. The other electrode, ending in an olive-shaped carbon bulb, is made to travel all over the abdomen, following the direction of the colon, The duration of the application should be from four to five minutes, the strength of the current should be such as to excite contractions of the abdominal muscles. The writer used a Dubois-Raymond coil with a Grenet cell, of half a litre capacity and placed the spool at 7 cm. Usually the application is given once daily, if necessary, twice.

PEDIATRIA, AUGUST, 1900.

1. **Experimental Researches Concerning the Toxins of the Colon Bacillus.**—By GIUSEPPE ANTONIO PETRONE. Read at the Paris Congress.*

2. **The Plantar Reflex in Newly-born Infants.**—By GAETANO FINIZIO. Read at the Paris Congress.

*NOTE.—Articles marked "Read at the Paris Congress," will be found under *Revue Mensuelle des Maladies de l'Enfance*, August and September, 1900.

ANNALES DE MEDECINE ET CHIRURGIE INFANTILES, AUGUST 15, 1900.

This number is devoted to a report of the proceedings of the Section on Medical Diseases of Children of the Thirteenth International Medical Congress held in Paris, August 2 to 9, 1900. For abstracts of the papers read before this section see under *Revue Mensuelle des Maladies de l'Enfance*, August-September, 1900, in this department of PEDIATRICS. The following articles have been omitted from the report in the *Revue* and have therefore been abstracted from the Annales:

1. **The Etiology and Pathogenesis of Gastro-enteritis in Nurslings.**—By Dr. VARGAS, of Barcelona. A report in connection with the second question before the Section: "Intoxications and Infections of the Gastro-intestinal Tract in Early Childhood. The author reviews at considerable length what is known to-day concerning the etiology and pathogenesis of gastroenteritis in nurslings, and proposes the following classification of the acute diarrheal affections in breast-fed infants: 1. Indigestion. 2. Gastrointestinal infection (local symptoms and fever, with a slight diarrhea). 3. Toxic gastrointestinal infection (symptoms of poisoning, severe diarrhea, convulsions, choleriform diarrhea). 4. Complicated toxic gastrointestinal infection (local phenomena, general infection of the blood and the viscera, nephritis, pneumonia, meningitis, etc).

2. **Concerning Wet-nurses with Goiter.**—By Dr. BEZY, of Toulouse. The author considers the question: Should women affected with goiter be accepted as wet-nurses? He does not think so because there is a certainty of danger for the infant, but because it is more prudent to exclude such women from nursing. In 1897 he saw a fatal case of tetany in an infant aged 6 months in which no cause could be found for the disease except the fact that the mother who nursed this baby had exophthalmic goiter. A few months later he saw another case of the same kind, and in 1898 he saw a case of tetany in an infant aged 3 months, who died after an illness of about forty days and whose nurse had simple goiter. The author thinks that tetany in infants may be of thyroid origin and that the thyroid affections of the nurse are transmitted to the nursling. He does not pretend to establish an invariable law, but simply wishes to call attention to the possibility of such transmission and to suggest further investigations on the subject.

3. **Concerning Some Points in the Roussel Law.**—By Dr. BEZY, of Toulouse. The law referred to in this article provides that abandoned children and children whose parents are unable to support them shall be cared for by the state. They are sent out to farms in various districts of France and the State pays for their maintenance. The writer recommends that (1) The physicians who are in charge of the districts should be required to possess special qualifications, and that the universities in France should establish special courses leading to a certificate entitling the bearer to qualify as such district physician for the children under the care of the

State. (2) The visits of inspection of these physicians must be more frequent, especially if the children be sick. (3) Every person who has charge of a nursling should be obliged to notify the authorities of every case of contagious disease that occurs within the family of the guardian. (4) That the law should be published that the guardians should be encouraged and that the departmental committees should meet more frequently.

4. **Concerning the Experimental Results of Inoculation with Extracts from Fecal Matter of Healthy and Sick Nurslings.**—By Dr. P. HAUSHALTER and L. SPILLMAN, of Nancy. In order to solve the question as to the absorption of noxious substances from the intestines the writers made inoculations of extracts from the feces of healthy and sick children into forty one rabbits. They found that the toxicity of the extract obtained from healthy feces is usually not greater than that of the extract of diarrheal feces. The toxicity of the former may, however, be equal or less than that of the latter. These experiments therefore do not confirm the toxic theory of diarrhea, but simply show that the toxicity of fecal matter is a complex factor, and that the quantity of poisonous substances absorbed by the system from the intestine is not in proportion to the quantity of toxic substances eliminated in the fecal discharges. They also show that the severity of a diarrhea does not depend upon the amount of poisons present in the intestine but upon the amount of resistance offered to the absorption of these poisons, and to the amount of neutralization which is effected by these resisting factors—the intestinal mucosa and the liver.

ANNALES DE MÉDECINE ET CHIRURGIE INFANTILES, SEPTEMBER 1, 1900.

1. **Concerning the Gravity of Rheumatism in Children.**—By M. H. BARBIER. Read at the Paris Congress.

2. **The Clinic for Nurslings in Dresden.**—By Dr. FLACHS. Read at the Paris Congress.

3. **Contagiousness and Prophylaxis in Tuberculosis of Infants.**—By X. D'ESPINE.

4. **Some Post-infectious Toxic States in Children.**—By. Dr. ALVAREZ.

5. **The Marine Treatment of Articular and Osseous Tuberculosis. Immediate and Remote Results.**—By C. LEROUX. Read at the Paris Congress.

ANNALES DE MÉDECINE ET CHIRURGIE INFANTILES, SEPTEMBER 15, 1900.

1. **Clinical Forms of Tuberculosis in Early Infancy.—By H. Richardiere.** Read at the Paris Congress.

2. **Radiography, Principally Stereoscopic Radiography in the Study of Congenital Dislocations of the Hip.—By P. Redard.** (Read at the Congress of Radiography and Electrology, Paris, 1900). The writer says that he has succeeded in obtaining radioscopic images of hips in cases of congenital dislocation. In addition to the ordinary methods he employed what he terms stereoscopic radiography. The images are examined in a stereoscope, and very accurate representations of the conditions, the relative position of the bones, etc., are shown. His stereoscopic radiographs were made with the apparatus of Chabaud, and the proofs were examined in Gazes' stereoscope. Chabaud's apparatus serves to determine the exact position of the object to be radiographed in relation to the vacuum tube.

3. **Researches Concerning the Normal and Pathologic Flora of the Intestine in Nurslings.—By H. Tissier.** Read at the Paris Congress.

4. **Results Obtained in the Treatment of Laryngeal Diphtheria Before and After Serum Therapy.—By Dr. Gallati** (Vienna). The writer reports his experience in the treatment of diphtheritic croup and sums up the subject in the following conclusions: (1) His clinical material offers a great degree of certainty concerning the equality of the cases observed during the period of serum-therapy and those seen before that period, so far as their statistical value is concerned. (2) By means of serum therapy we can often succeed in avoiding the necessity of operations in patients who otherwise could not escape intubation. (3) Serum therapy has enormously lowered the mortality among intubation cases. (4) Serum therapy diminishes markedly the duration of intubation itself. The physician should therefore not delay the administration of antitoxin in all cases of laryngeal diphtheria, as well as in other forms of the disease. No undesirable effect from the serum need be feared. He gives two large statistical tables, which show the following figures:

TABLE A.—BEFORE SERUM THERAPY.

29 cases; 23 operated; 14 deaths; 6 not operated, 21 per cent. of cases of stenosis.

Mortality of operated cases, 47.8 per cent.

Total mortality, 38.8 per cent.

Average duration of period of intubation, 108 hours in cured cases, without secondary tracheotomy.

TABLE B.

32 cases; 18 operated; 1 death, 14 without intubation, 43 per cent. of cases of stenosis.

Mortality of operated cases, 5.55 per cent.

Mortality total, 3.125 per cent.

Average duration of period of intubation, 58 hours in cured cases, without secondary tracheotomy.

THE SURGICAL ANATOMY OF CONGENITAL DISLOCATION OF THE HIP-JOINT.

E. H. NICHOLS and E. H. BRADFORD (*American Journal of the Medical Sciences*, June, 1900) consider particularly the causes of relapses of congenital dislocation of the hip after reduction without operation, and base their description upon five pathologic specimens preserved in the Warren Museum of the Harvard Medical School.

Summary.—Judging from the examination of these specimens the anatomical peculiarities in congenital dislocation of the hip are:

1. A dislocation of the head of the femur upward and slightly forward upon the surface of the ilium.
2. A shallow, triangular acetabulum, which faces more or less directly outward.
3. A diminution in size of the head of the femur.
4. A diminution of the angle between the neck and shaft to nearly a right angle.
5. An increase in the amount of femoral torsion.
6. A capsular ligament, in the form of an hour-glass or a simple sac, adherent to the surface of the ilium above, sometimes dilated about the acetabulum below, and constricted about the neck of the femur.

The obstacles to the reduction of the deformity are:

1. The peculiar attachment of the capsular ligament, which causes a shortening of ligamentous bands at various points, chiefly laterally and below.
2. Constriction of the middle of the capsule, so that it may be impossible to draw the head of the bone through the constriction.
3. Thickening of the capsule just above the apex of the acetabulum.
4. Adhesions between capsule and head of the femur.
5. Contraction of the adductor muscles.
6. An increase of femoral torsion, so that when the head of the femur is placed in the normal acetabulum the knee looks inward.

Obstacles to retention of the head of the femur after complete reduction are:

1. A flattened or insufficient acetabulum placed too obliquely.
2. An insufficient head.
3. An extremely short neck of the femur.
4. Obliteration of the cavity of the acetabulum by a mass of dense fibrous tissue.

PEDIATRICS

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Vol. X.   DECEMBER 1st, 1900.   No. 11

ORIGINAL ARTICLES

THE TREATMENT OF SCARLATINAL NEPHRITIS.*

By Robert Coleman Kemp, M.D.,
New York.

(*Continued from Nov. 15, 1900.*)

Regarding Hypodermoclysis.

The average quantity of normal saline solution by hypodermoclysis is ℥i–℥ii in a child and ℥ii–℥iv in an adult, occasionally, ℥vi–℥viii in the latter. The urine averages in quantity as a result from three to five times the quantity of the saline injected.

The indications are the same as for enteroclysis, oliguria dropsy, coma, convulsions, or suppression of urine.

The lateral lumbar region, as shown in Fig. 15 is convenient. Neither respiratory movements nor motion of the limbs can cause pain or discomfort. There is considerable cellular tissue in this location, and there seems less danger of tension than in other places, such as beneath the breast, and less danger of glandular enlargements would be found in this region if infection occur.

Normal absorption of saline solution given subcutaneously, as we have noted, occurs in three and a half to four minutes, at which period marked diuresis appears. When the circulation is weak, naturally, lymphatic absorption is much slower. It can be hastened by combining hot enteroclysis at the same time with the hypodermoclysis and by gentle peripheral massage The subcutaneous injection should be given slowly. The fluid cools off markedly in passing through the small needle. The fluid should be at 105° F.if the aspirating needle be employed, and even as high as 108°-110° F. if the small hypodermic be used. In the latter case there would be a loss of seven or eight degrees. Strict antisepsis should be employed—ethyl chloride spray can be used to prevent the pain of puncture and a gauze and collodion dressing used.

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* Read before the New York Academy of Medicine April, 1900.

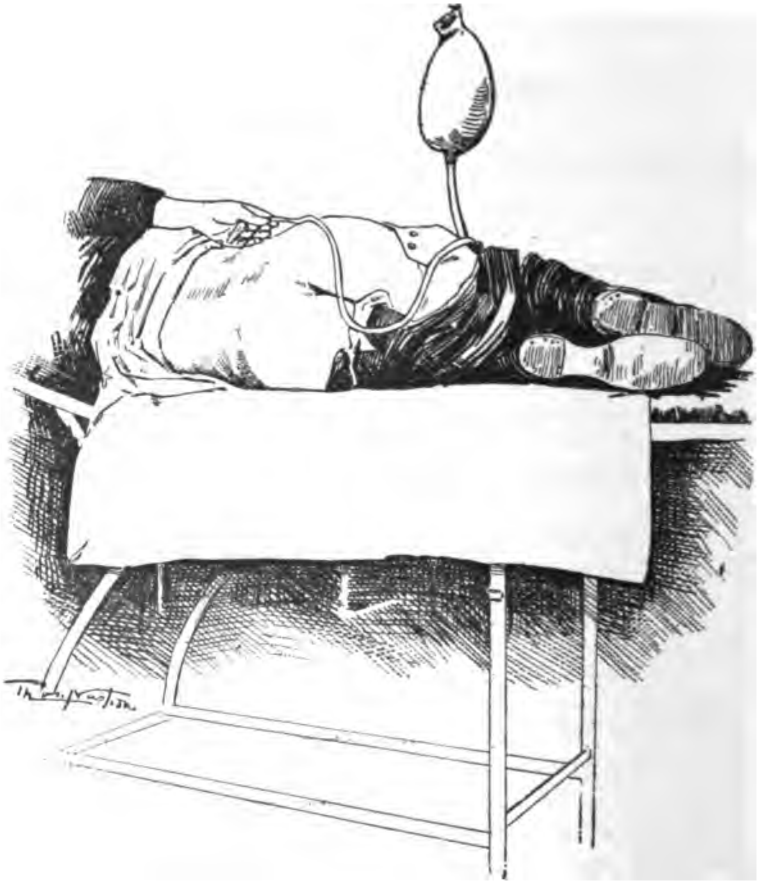


FIG. XV.—Hypodermoclysis in the Lateral Lumbar Region.

Hypodermoclysis should not be given directly into edematous tissue. If the dropsy be considerable, so that no healthy tissue be found, then employ enteroclysis—first as a diuretic. The region noted, however, is usually favorable. The theory that dropsy or pulmonary edema contraindicates hypodermoclysis or enteroclysis, on the ground of "drowning the tissues," seems to us absurd. Dr. Meltzer advocates salicylate of soda solution given by hypodermoclysis as a diuretic (10–20 grains).

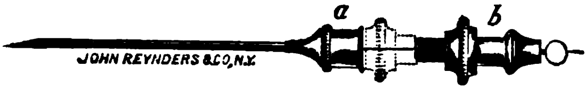


FIG. XVI.—Hypodermoclysis Needle with Attachment for Fountain Syringe.

The small attachment, Fig. 16, which we show you, will fit the standard hypodermic or aspirating needle and serves for the attachment of the fountain syringe tube or a Dawbarn syringe. With a small glass syringe drawn into a point and a short piece of connecting rubber tubing; this can be converted into a cheap, improvised antitoxin syringe if a complicating diphtheria occur. This apparatus can be readily boiled. The antitoxin can be measured with the barrel of the hypodermic syringe.

We have noted that normal saline hypodermoclysis when given after enormous antitoxin injections, lessens, to a great degree, the congestion of the kidneys caused by such large antitoxin injections.

We have employed saline hypodermoclysis several hours after antitoxin injection in diphtheria when renal complications were in evidence, with the result of clearing up the trouble within forty-eight hours. Enteroclysis was combined with it.

There is one fact to which we would call your attention. Occasionally, after a hypodermoclysis or infusion, there is a chilly feeling, a temporary rise of temperature, which is followed by a fall of temperature and profuse diuresis. Alarm has been caused to some by this, but it will at times occur, especially in septic cases, and has no dangerous significance, but merely is a reaction following the injection. We have noted that this seems to occur more frequently when the temperature of the infusion is 102°–105° F.; also with hypodermoclysis at 101° F. instead of 105°–110° F. In the latter case, especially as there is a marked loss of temperature, fluid at 101° F. is too cool.

In connection with hypodermoclysis we refer to an article entitled, "Observations and Suggestions Concerning Hypodermoclysis," which will be found in the *New York Medical Record*, April 14, 1900.

Infusion.

This method can be employed either by itself or following a previous venesection (washing the blood).

The temperature of the normal saline solution should be 118°-120° F., as demonstrated by Dr. R. H. M. Dawbarn, of this city. Most of our authors advocate a temperature of 102°-105° F., but this is incorrect.

If venesection precedes the infusion, in a child of five years, from ℥ii-℥vi may be taken according to the urgency of the symptoms. The amount of saline solution at a temperature of 118°-120° F. that should be introduced should be nearly twice that of the blood taken.

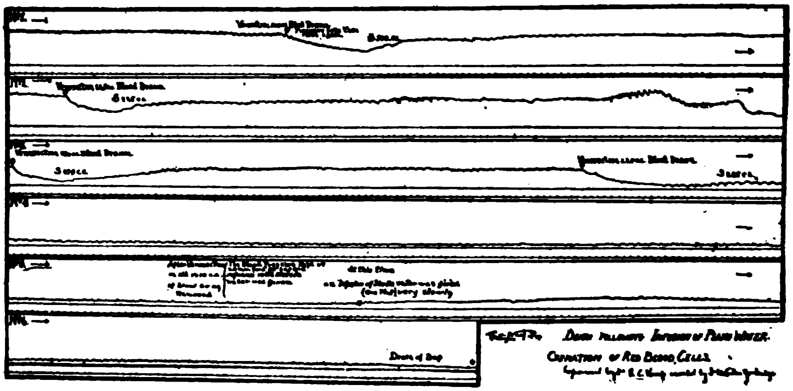


FIG. XVII.—Death of Animal Following Infusion of Plain Sterile Water.

In uremic convulsions, venesection followed by infusion is often indicated. Also in coma in uremic poisoning (delirium, etc.), and even in severe pumonary edema or general anasarca; also in suppression of urine.

Normal saline solution—one drachm of salt to the pint of sterile water, at a temperature of 118°-120° F. should be employed. Some have advocated infusion with plain sterile water as a substitute, deeming the addition of salt unnecessary. This is a highly dangerous procedure, as Dawbarn has demonstrated.

The injection of plain, sterile water will kill the patient by destroying the red blood cells. We repeated Dr. Dawbarn's experiment with the assistance of Dr. Malcolm Goodrich (see Fig. 17): and after producing by several venesections a condition of artificial shock from hemorrhage, infused with plain sterile water, with the result of the rapid death of the animal within a few minutes. Examination of the blood by Dr. Goodrich showed marked crenation of the red blood cells.

In connection with our experiments we find that ether causes much the same stages in the healthy kidneys as does scarlatina. We append Fig. 18, which may be of interest in this connection. The results of anesthesia under ether are well demonstrated.

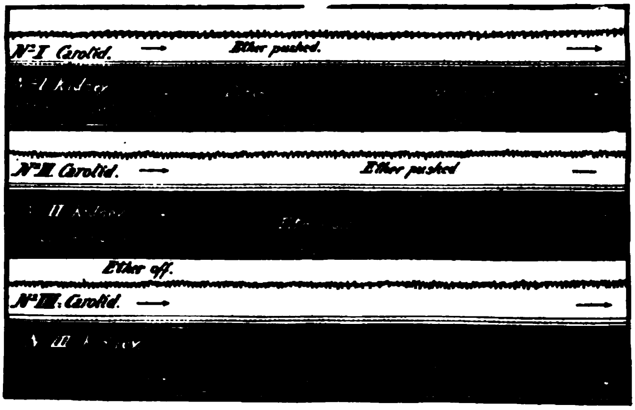


FIG. XVIII.—Effects on Ether Anesthesia.

Dr. Wm. H. Thomson states:

"The experimental researches originally made by myself and Dr. Kemp, on the effect of ether upon the circulation of the kidneys seem to demonstrate that ether inhalation can cause in healthy kidneys acute renal suppression as complete as in scarlatinal nephritis. All the stages, beginning with oliguria, then albuminuria, then hematuria, and lastly stoppage of secretion, developed with constant regularity, according to the amount administered and the duration of the anesthesia."

Results of Ether Anesthesia.

Carotid Tracings.—The effect of ether on the general blood pressure, as shown by the carotid tracings, is to raise the pressure from the beginning, even under mild anesthesia When the ether is pushed, the carotid tracings rise again slightly. When the ether is removed, there is a moderate fall.

Kidney Tracings.—Under moderate anesthesia there is at first a slight rise of the tracings from the base line, corresponding to the carotid tracings, but as the ether is pushed a marked contrast from the simultaneous carotid tracing is noted by a great fall in the oncometric curve down to the base line and even below it. If the anesthetic is thus kept up the waves grow progressively shorter, or even disappear for a few seconds. If the ether is then suspended it takes from thirty seconds to two minutes for the kidney to recover, when the tracing line begins to rise again, to be again depressed if ether is readministered. This effect was noted over and over again, and from its uniform contrast with the corresponding carotid tracing it shows that this effect upon the kidneys is specific, and what is more, this specific effect can be separately noted when ether is mixed with other anesthetics. Clearly, it cannot be imputed to the increased tension caused by ether. for we have the typical ether kidney tracings appearing during the use of the mixtures with chloroform, when there it a reduced tension from the chloroform heart, as with the use of the A.C.E. mixture.

The renal secretion under ether, determined as above described, was first an early diminution in the number of drops from the canula in the ureter. The secretion diminished progressively, as the oncometric curve dropped toward the base line, until, finally, under free and continuous etherization, a complete suppression occurred. These are shown in the figure "inverted V's" on the upper line—3 drops before ether was pushed, with only 2 drops in about four times the intervals afterward, and only 1 drop toward the end of the tracing. Albumin appeared early, even under moderate anesthesia. This increased under deep narcosis, until just before the suppression it amounted to about 60 per cent. in volume.

Venesection.—We believe that venesection at times alone, or on occasions followed by normal saline solution, might be more frequently employed with benefit. Dr. Holt believes it of service in uremic convulsions at times; it might be of service in uremic convulsions at times; it might be of service in coma; some advocate it in marked anasarca. It has proved of service in severe pulmonary edema.

Hot Saline Pack.—The hot pack (moist) is an excellent method to promote diaphoresis as an aid to elimination to relieve the kidneys, and also to promote diuresis. We employed the blanket rung out in hot normal salt solution or even a very strong saline solution.

The average wooden pail contains three gallons when full to the brim, but only about two gallons can be employed in it when the woolen blanket is to be placed in the pail. About two ounces of salt therefore would give us a normal saline solution. A stronger solution, ½ to 1 pound of salt to two gallons, appears to be more stimulating to the skin, and cause better diaphoresis.

A dry blanket should be placed over the rubber drawn sheet and the patient wrapped in the hot moist blanket (the blanket being wrung out in the pail of hot salt water). Cold applications should be kept on the forehead and a warm drink administered if possible. The patient may remain in the pack 5 to 15 minutes, according to indications, and then be quickly dried in a blanket.

We believe in renal cases that the patient should always lie upon a light woolen blanket. A Turkish towel should be over the pillow slip so that perspiration will be readily absorbed, lest the patient be chilled by lying on a moist sheet.

Counterirritation to the Kidneys.—The hot water bag partially filled is excellent. The old country methods of the hot salt bag, or hot tin pie plate wrapped in flannel, often must be improvised. Dry cups are also excellent.

Dr. Wm. H. Thomson employs a simple method by dipping a teaspoon in boiling hot water, quickly wiping dry, and touching the hot spoon over the kidneys. This application is made so as to cover the lumbar regions completely. There is marked reddening of the skin and reflex stimulation, and the procedure can readily be carried out in every case.

Carbonated Baths in Nephritis.—(**Nauheim.**) In the carbonic acid bath we believe we possess a valuable agent for the treatment of renal conditions, and yet curiously enough it seems to be seldom employed for this object. Artificial salts can be secured from any drug store in convenient form, and excellent results have followed their use. It consists of 8 cakes wrapped in tin foil with a package of sodium bicarbonate.

Preparation of the Bath.—A rubber sheet should be placed in the tub (if porcelain) lest the chemical reaction injure it, otherwise a Turkish towel or sheet will be sufficient, the cakes can also be placed on the sheets of tinfoil as a further precaution.

A full salt water bath sufficient to cover the chest completely should first be prepared. We have found that 3 to 5 pounds of salt, Powles sea salt, Mediterranean salt, Genesee salt, or even kitchen salt are sufficient, though the circular recommends larger quantities. It is preferable to break the cakes into smaller pieces, as the reaction is more active, though they do not last as long.

In severe case of nephritis, or when we wish marked reaction, we believe it generally more satisfactory to add 3 or 4 extra cakes broken in pieces. The cakes or fragments should be added about two minutes before the patient is to enter the bath. The bicarbonate of soda is to be added after the salt bath is ready—in other words, first the salt bath, then dissolve the soda bicarbonate, and about one or two minutes before the patient enters it add the cakes, or broken fragments of the same. An active bubbling then is in evidence.

The addition of ½ to 1 pound of soda bicarbonate after the patient has entered the bath and also some extra cakes broken into fragments, as heretofore stated, causes a far greater chemical reaction, and is often to be desired. Gentle stirring of the bath by the attendant is also of service. The patient should be absolutely quiet, with the chest completely covered. The head and the temples should be wet with cold water before entering the bath. The temperature should be from 95° F., generally at 98° F. It feels much hotter on account of the chemical reaction and we find that above 100° F. it seems to be depressing. In oliguria, coma, convulsions, and suppression, or in evidences of uremic poisoning—especially on the incipiency of the gastro-intestinal or nervous symptoms—this bath is most efficacious, and in exacerbations of a chronic nephritis or signs thereof. Naturally certain conditions may render the bath impossible. We are accustomed to make the first bath of only 3 to 5 minutes duration and increase it gradually to 10 to 12 minutes. In acute conditions two such baths can be given within the first 12 hours, each of 10 to 12 minutes duration.

In chronic nephritis a bath for two days in succession and then omit one day, so on for twenty-four baths; at times every other day is preferable. We have had considerable success with the carbonic baths in cases where the ordinary hot baths or hot salt baths had produced little or no effect. In chronic nephritis the general vasomotor stimulation and circulatory improvement are the valuable results secured.

In oliguria, hyperacidity, etc., the diuretic effect of the baths is marked. We have noted excellent results therefrom in cases of crystalline urine, with a tendency to renal insufficiency, etc.

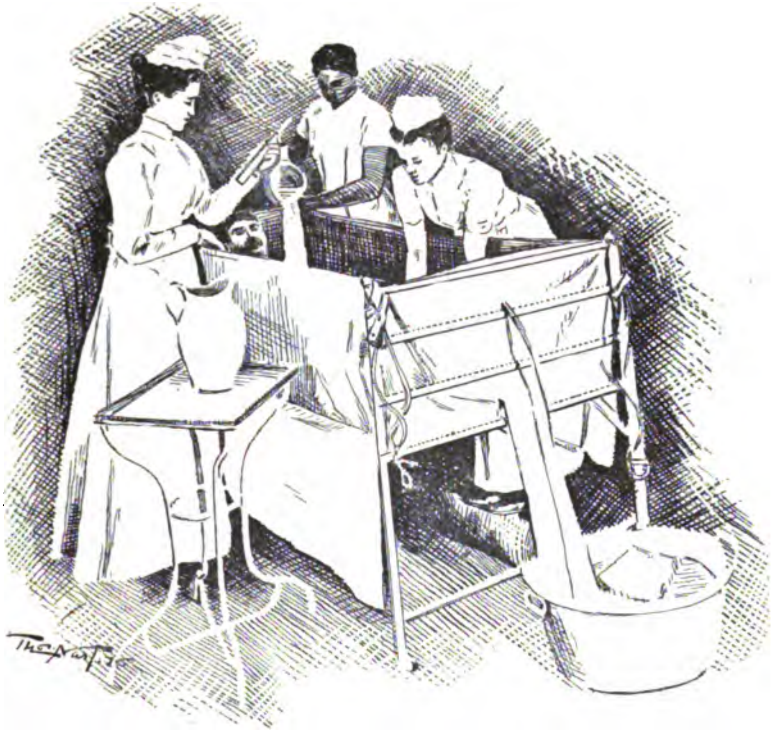


FIG. XIX.—Dr. Chambers' Clinical Bath Tub.

Occasionally the patient complains of a feeling of oppression on entering the bath, but this soon passes off. A slight stimulant, such as spts. ammonia aromatic, can be given if this occurs, or just before the bath if the patient be of a nervous temperament, or if such temporary depression is feared

As a matter of interest (see Fig. 19) we desire next to show a light portable folding bathtub. It has an overflow as well as an outflow; it can readily be slipped beneath the patient and unfolded about him. It can be set up on any iron cot, an infant's or hospital cot being especially applicable; on the other hand, it can be employed on any bed, supports being improvised. It is especially useful for country practice, or where there are no bathrooms, or on account of inadequate assistance or of the patient's condition it is impossible to transport him to the bathroom. It is light and cheap, costing only $12, and can be folded into a small package or can be placed in a bag of moderate size. It was originally devised as a bath for typhoid fever. It seems frequently convenient to us under some conditions to employ it for the hot bath in nephritis to produce diaphoresis or diuresis and especially suitable for the carbonated bath, which we have just described. It can also be used with the cool bath for the purpose of temperature reduction.

We now desire to call to your attention the

Treatment by Serum Injection (Scarlatinal).

The blood serum obtained from scarlatinal cases on the fourth to the twenty-first days of convalescence has been employed in the treatment of scarlatina and hence is adapted to the kidney complication.

The formula is as follows:

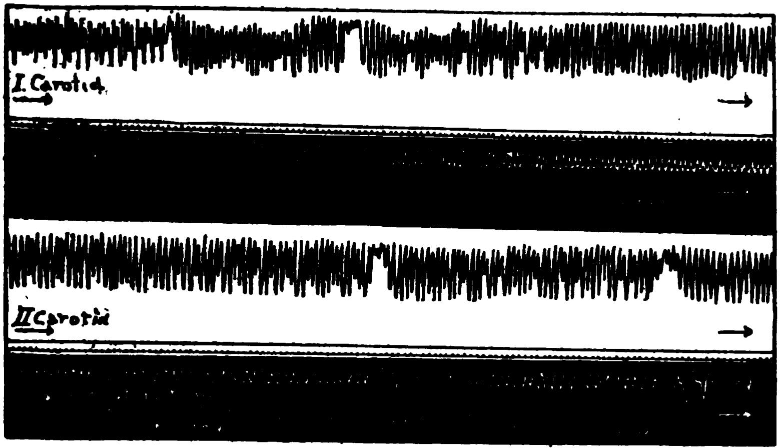
100–150 cc. of blood serum to which an equal quantity of normal sterile saline solution has been added. Then add to this 1 per cent. of chloroform (shake well) and let this stand for twenty-four hour hours; it should then be carefully filtered 20–40 cc. of this solution is injected into the patient.

Some favorable results following this method of treatment have been reported and it would seem worthy of further trial.

As we have previously stated, streptococcus infection is liable to complicate scarlatina. Such septic infection would further increase the severity of the kidney complications. This condition would seem to us to be more liable to occur when there has been severe angina, evidently of a septic character. Some septic symptoms accompanying the nephritis, chills recurring, etc., would be suspicious, also the appearance of an endocarditis complicating the nephritis, which, we believe, is rare with this condition and most liiable to be a septic endocarditis when such occurs. The nephritis therefore becoming more acute in type, especially if accompanied by chills or chilly feelings, and sweating, or an endocarditis would be significant. We believe a blood examination a wise procedure.

If streptococcus pyogenes be found then an injection of Mamorek's antistreptococcus serum or some other good preparation would seem to be indicated. The main objection to the imported serum is that the preparation is not as fresh as the others.

These antistreptococcus serums are only of value, however, when the streptococcus pyogenes is found, and they have no beneficial influence over the other streptococci. Unfortunately the streptococcus infection is at times of another variety.



FIG· XX.—Effect of Antistreptococcus Serum

In connection with this topic we wish to call to your attention some experiments performed by Dr. Wm. H. Thomson and myself with antistreptococcus serum and normal horse serum, regarding their effects both on healthy and on diseased kidneys. These experiments were reported in a case of chronic infective endocarditis in the 1898 edition of the "Report of the Association of American Physicians. We desire you to observe Fig. 20, tracings showing the effects produced on the heart, respiration and kidney circulation and secretion in a healthy dog following the injection of enormous doses of antistreptococcus serum. The method to secure the tracings was the same as in our experimental researches on the effects of anesthetics on the kidneys, *N. Y. Medical Record*, Sept. 3, 1898. A partial report, May 5, 1899—a paper read by me before the N. Y. Academy of Medicine. A complete report with clinical data, reported in the *N. Y. Medical Journal*, November 18–25 and December 2, 1899, with a discussion by Dr. Wm. H. Thomson.

The effects produced by the injection of antistreptococcus serum on the general circulation and respiration were slight and evanescent, while on the other hand the fall of kidney pressure was marked, at times reaching the seconds line, urine rapidly diminished in quantity, as registered by the inverted V's on the kymograph, and finally only a reddish fluid was seen in the glass tube with which the ureters was catheterized. Albumen appeared early. The urine contained both blood corpuscles and dissolved hemoglobin. The kidneys on removal appeared macroscopically intensely congested. A nnmber of experiments were performed with similar results. They seem to indicate that large doses of antistreptococcus serum administered hypodermically and rapidly produce congestion of the kidneys with albuminuria, and in some cases hematuria and hemoglobinuria with finally suppression. Pathologically the kidneys were so found. We must remember that the quantities administered were much in excess, in proportion to the weights of the animal, of anything which would be administered to human beings for medical purposes.

We then injected large doses of normal horse serum in several cases and found a generally similar effect to the antistreptococcus serum, but much less marked.

We also tried the effects of gradual dosing with antistreptococcus serum. The whole dose was large, but distributed over several days in divided doses. The urine was diminished in quantity, but showed very little albumen and no blood, evidently much less effect upon the kidneys. All these experiments were with healthy animals.

One interesting observation was made on a dog infected for us by Dr. W. H. Park at the laboratory of the N.Y. Board of Health. On April 17, 1898, 50 cc. of a virulent culture of streptococci was injected into a vein. The next morning the dog presented serious symptoms of poisoning and streptococci were found in the blood.

Twenty-four hours after the dog had been infected 20 cc. of antistreptococcus serum were injected. The animal soon began to improve, and on April 20 was apparently cured.

Blood drawn on that day when he was sent to us was examined and no streptococci were found.

His urine showed a faint trace of albumen.

We found the tracings of the general circulation and of the oncometer were those of a normal dog.

On the other hand we performed another interesting series of experiments, not reported in the Transactions.

First we had the kidneys of normal rabbits carefully examined.

Then we injected large doses of antistreptococcus serum and normal horse serum respectively into several rabbits, noting carefully the degree of congestion of the kidneys resulting therefrom.

In addition the same doses in quantity were injected into rabbits respectively of antistreptococcus serum and normal horse serum and then followed several hours later by a hypodermoclysis of normal saline solution twice as great as the quantity of serum.

The degree of congestion of the kidneys was much less marked in these cases, due evidently to the action of the normal saline solution in eliminating the toxic properties of these serums. This was in healthy animals.

On the other hand, as heretofore noted, the infected animal did well under the proper dose of the antistreptococcus serum and we must also remember that enormous doses were given in the case of the healthy animals.

These experiments were instituted on account of an acute exacerbation of renal symptoms, an hemorrhagic nephritis following the injection of antistreptococcus serum 36 hours after the first injection. This continued with such severity, along with increased rigors and fever, that the question arose whether the antistreptococcus serum did not itself aggravate the condition of the kidneys.

Normal saline enemata and hot saline enteroclysis for a time alleviated this condition, though the patient ultimately died from the uremic suppression.

From our limited experience and the experiments instituted we are inclined to believe that the action of the antistreptococcus serum is so far an "open question" that an exact standard of strength cannot yet be obtained, and if employed it should be used cautiously. The subsequent injection of normal saline solution by hypodermoclysis and also the use of saline enemata and enteroclysis would be valuable as an adjunct.

The recent report of the commission which investigated antistreptococcus serum was not of a favorable nature. Some of its members found in the use of saline infusion much more satisfaction in infections of this character.

GENERAL DIRECTIONS.

Elimination of the toxins of scarlatinal nephritis should be increased by improving the renal secretion, and skin and bowel action.

Plenty of water (boiled) and cool, but not ice-cold, is one of our best diuretics and eliminatives. Alkaline mineral waters are also excellent. Dr. Holt finds water to which a small dose (2 or 3 grains) of an alkaline diuretic, such as citrate of potash, has been added, to be of value.

The bowels should be kept freely open by saline cathartics so as to secure one or two loose movements daily.

The skin should be kept in good condition by frequent sponging and warm baths.

Absolute rest in bed should be insisted upon. In fact, in general the suggestion of Dr. Winters that bed treatment in scarlatina should be of six weeks' duration, is excellent. We agree with him in so far that scarlatinal nephritis may occur in a mild case of the disease and that exposure to cold or draughts of air during desquamation, or, in fact, anything that may cause interference with the proper performance of the functions of the skin, may be an accessory factor in causing the nephritis or an exacerbation of the same.

The diet should be milk or one of its derivatives—milk and lime water, or milk and vichy, peptonized milk, buttermilk, matzoon, koumyss, leben, whey, junket, malted milk, a thin gruel mixed with milk, or barley water and milk.

Most of the mild cases tend to spontaneous recovery under rest in bed, fluid diet, plenty of water, and the proper attention to the skin and bowels.

Some of the iron preparations, as tinct. of the chloride, have often to be given on account of the marked anemia and some little solid food (farinaceous) must be cautiously employed if there is great loss of weight.

If the disease tends to becomes subacute or chronic, change to a warmer climate may be necessary, and flannels should be worn next to the skin in such cases.

Prophylaxis.

We believe that care exercised from the incipiency of scarlatina will lessen the chances of a scarlatinal nephritis, such as the absolute restriction to fluid diet (milk or derivatives), plenty of water, attention to the skin and bowels, and rest in bed, even in the mildest cases. The febrile albuminuria, or in fact any renal disturbance whatever should receive treatment, as even such condition might become one of acute congestion of the kidneys, hence diaphoretic treatment, as hot baths, etc., should be employed and diuresis be produced. It seems to us that too little attention is given to these so-called "temporary and unimportant" conditions. The plea that the average busy practitioner has "no time" for examination of urine once a day in such cases has no more weight than that of a man who has no time to attend to the details of his business. The simple boiling test for albumen and urates and obtaining the specific gravity requires little time, or it is easy to secure assistance in such work. The microscopical examination could be made every other day for the first two weeks. We believe in such precautions throughout the disease from its incipiency.

In severe cases with scanty urine, fever, and marked dropsy Dr. Holt advises the hot pack or vapor bath, and even pilocarpine hypodermically, gr. 1-60 to a child three or four years of age.

To counteract the depressing effects of this drug stimulants should be given at the same time. There should be active counter-irritation over the kidneys by dry cups followed by poultices or mustard paste. Rochelle or Epsom salt he advises as best to secure two or three loose movements, or calomel, but depletion should not be carried too far.

In suppression with uremic symptoms, high temperature, delirium, pulse of high tension, etc., he advises nitroglycerin (gr. 1-300) every hour for three or four doses to a child five years or until an effect is produced.

Uremic convulsions at times can be averted by the use of morphine, but venesection is the most rapid and certain to give relief. Two to six ounces of blood from a child of five years may be taken, according to the general condition or urgency of the symptoms. The improvement, though often only temporary, gives time for the employment of catharsis, diuresis, and other measures. The venesection may be followed by an infusion of normal saline solution at 120° F. (1 dram of salt to water Oi). The amount introduced would be nearly twice that of the blood taken. This overcomes the depressing effects and acts to wash the blood and toxic elimination. One should watch for complications, such as dropsy of the serous cavities, pericarditis, endocarditis, or pulmonary edema.

For Oliguria.—(A.)

Plenty of water internally.

Citrate of potash.

Lithia water, natural or artificial.

Sponge bath.

Wet pack (hot water).

Wet pack (hot salt water).

Carbonated bath.

Hot bath.

Hot salt water bath.

Hot mustard bath.

Hot vapor bath (as from vaporizer or croup kettle).

Hot air bath (as from a lamp).

Oxygen inhalation—to improve circulation, respiration and glandular functions, and hence an aid to renal secretion.

Counterirritation over the kidneys by dry cups, hot water bag, poultices, etc.

Enteroclysis at 110–120° F. (continuous) with normal saline solution, 10–20 minutes or more, a.m. and p. m.

Hypodermoclysis—small amount, ℥ii–℥iv, if other means seem not sufficient.

Saline cathartic.

We find of the above remedies the following to give us the most satisfactory results: Water in large amount with citrate of potash in addition or lithia. The hot bath, preferably the carbonic acid bath (moderate heat, 98–101° F.); next in efficiency the hot salt bath, and then the plain hot bath.

The hot salt water pack or hot water pack may be substituted if the bath cannot be given. The hot air or vapor baths have seemed rather depressing and have not given us good results. Cold should always be applied to the head of the patient when in the hot bath or hot pack. Counterirritation over the kidneys by dry cups is an excellent procedure, or by the hot spoon, as described, or even with a hot flat iron or hot water bag. Enteroclysis (continuous) with normal saline solution at 110–120° F., a. m. and p. m., for 10–20 minutes or more, should always be begun on the appearance of oliguria. It is one of our best methods of treatment to secure profuse diuresis, diaphoresis and bowel action. Enemata of hot normal saline solution may also be given tor absorption.

Oxygen inhalation is a valuable agent to employ even at an early stage, since the circulation, respiration and general functions of the body, the action of the lymphatics, glandular secretions, etc., all receive benefit. Hence the renal functions and elimination must necessarily improve under its use. We have already discussed it at some length.

Hypodermoclysis with ℥ii–℥iv of normal saline solution in the ilio-lumbar region should at once be given if improvement in the quantity of urine does not immediately follow the above treatment described. It may be repeated if necessary. It is well to give this injection at the time of the enteroclysis, as better absorption will then occur.

For Bowels.—(B.)

Epsom salt.

Rochelle salt.

Seidlitz powder (a little raspberry syrup may be added to make it more agreeable).

Citrate magnesia.

Calomel, more rarely, or calomel and jalap.

We have employed calomel, followed by seidlitz powder or citrate of magnesia with satisfactory results.

For Restlessness.—(C.)

Cold coil to head.
Ice bag to head.
Sponging.
Sodium bromide.

To Reduce Temperature.—(D.)

Sponging—alcohol and water.
Carbonated bath.
Brand bath.

For High Tension Pulse.—(E.)

Nitroglycerine.
Sodium bromide.
Chloral.
Amyl nitrite (in emergency).
Tr. aconite, (large doses, see Dr. Winter).

To Improve Heart Action.—(F.)

Strychine.
Tr. strophanthus.
Nitroglycerin.
Ether.
Musk.
Camphor (in sterile almond or olive oil).
Tr. digitalis.

For Uremic Convulsions.—(G).

Nitrite amyl.
Nitroglycerine.
Morphine hypodermatically.
Venesection.
Venesection and infusion.
Enteroclysis.
Enemata of saline solution.
Hypodermoclysis.
Oxygen.
Chloroform inhalation as in eclampsia in rare cases.
Cups.
Baths.
Hot packs.
Dry heat.
Pilocarpine and saline cathartics, etc.

In uremic convulsions we find that the inhalation of amyl nitrite will often cause immediate relief. Nitroglycerine may be given if tension is still high.

Venesection is often an instantaneous relief; it may be followed by an infusion. Enteroclysis at 110°–120° and with it a hypodermoclysis should then follow. If we desire to perform venesection we may give an inhalation of amyl nitrite or a hypodermic injection of morphine, then follow with enteroclysis and hypodermoclysis, baths, catharsis; pilocarpine may then follow.

For Uremic Coma also for Suppression of Urine.—(H).

Enteroclysis.
Hypodermoclysis.
Infusion alone or preceded by venesection.
Oxygen.
Cups.
Amyl nitrite or nitroglycerin if high tension, or tr. aconite.

The same method should be followed as in G; morphia, of course, should not be given.

For the General Infection.—(I).

Venesection is valuable. often followed by infusion, if case is severe.

Enteroclysis (should be given at once).
Hypodermoclysis.
Cups to chest and to kidneys (important).
Oxygen (important).

Pleurisy with Effusion.—(K).

Diuresis should be caused by
Enteroclysis.
Hypodermoclysis.
Cupping, etc.
Aspiration may be necessary.
Oxygen is of service.

General anasarca treated by same method, by catharsis, hypodermoclysis should not be given in edematous tissue.

Ascites.—(L).

Due to oliguria, by the same method, aspiration may be needed.

Pericardial Effusion.—(M).

Swallowing ice.
Ice-bag to chest or extreme heat.
Cupping.
Heart stimulants.
Aspiration if necessary.

In conclusion we would ask you not to condemn the therapeutic suggestions which may seem to you to depart from routine methods on merely theoretical grounds but at least to give them a fair trial in your practice. We are well aware that you will probably disagree with some of the methods that we advocate. Our aim is to invite discussion; for the interchange of thought is the purpose for which our academy was founded and is the chief incentive to investigation and an aid to medical progress.

Apparent Death in the New-born.—B. S. Schultze directs that the cord should not be cut if the apparently asphyxiated infant is bluish-red in color and muscle tonus is still present. Aspirated matter should be removed from the mouth and cutaneous stimuli applied. If no reaction follows, the cord should be cut and the child dipped momentarily into cold and then warm water, repeating until a loud cry results. If the child is pale and limp like a corpse, useless time would be lost in trying to produce reflex excitability. The cord must be cut, the mouth cleansed, the root of the tongue pressed forward to raise the epiglottis, and artificial respiration should be performed by the Ewing method. Eight to ten inspiratory and expiratory movements are then to be made and then a warm bath should be given. If no result follows the swinging should be repeated. After the first spontaneous inspiration which usually follows the end of the expiratory swing, the child is placed in the warm bath; if respiration is superficial it should be plunged into cold water.—*Wiener medizinische Blätter*, August 30, 1900.—*Medical Record.*

A DEATH FROM NITROUS OXIDE GAS ANESTHESIA.*

By Thomas C. Evans, M.D.,

Professor of Ophthalmology, Otology and Laryngology in the Kentucky University, Medical Department, Louisville, Kentucky.

I WISH to report a death occurring from nitrous oxide gas anesthesia. The patient was a child of 5 years of age, a female, who was brought to see me on June 12, 1900, and operated on June 17th.

The day the child was brought to me for operation, which was the removal of some large adenoid growths from the nasopharynx, was the second time I had ever seen it. The first time it was brought to me it apparently had a little inflammation of the faucial tonsils, and gave the history of having had the measles thirty days before I saw it.

The child was rather badly nourished, was a decided mouth breather, with quite a considerable discharge from the nose, and when first brought to me I advised that the operation be delayed for a few days.

When finally brought back for the operation I explained to the father that nitrous oxide was probably the safest anesthetic that the child could take; that it was much less dangerous than chloroform; that it could be given with perfect safety at the office; that it would be much less troublesome and less dangerous than the administration of chloroform.

The child was brought to me on Sunday when the father could best come with it. I explained that the operation could be done with or without an anesthetic, and asked the father to make the choice. He said that I was the doctor, and whatever I said in the matter would be what he would do. I replied then that we would go ahead and give nitrous oxide gas.

The child was taken into the office of Dr. Grant, the dentist, in the same building with me, placed in an ordinary dentist's chair, and prepared for the operation. Dr. Grant, being in the habit of giving gas, was to be the anesthetist. The child appeared a little frightened, but not the least panicky. It cried slightly. As soon as the administration of gas had been commenced, almost from the first inhalation, the expression of the child's face did not denote any fear, and in a second or two the gag fell out of its mouth.

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* Abstracted from Proceedings of the Louisville Surgical Society.

I will say in regard to the administration of nitrous oxide gas that we have to use a mouth gag if we are going to do any operation about the mouth, because after the patient gets under the influence of the gas there is a spasm of the masseter muscles which makes it impossible to get the mouth open sufficiently to permit any operative manipulation. In this case I used the ordinary O'Dwyer gag, and after two or three inhalations the gag became loosened and dropped out of the mouth. The anesthetic was stopped and the gag replaced. The child at that time was semi-conscious, not at all cyanotic, and after two or three inhalations, after replacing the mouth gag, Dr. Grant said to me that the child was ready for the operation. I was simply going to do a currettage of the nasopharynx.

The first pass I made with the currette I discovered that there was absolutely no hemorrhage, and I now believe that the child was dead at that time. I abandoned the operation at once, and had Dr. Grant take the child by its heels and hold it up, and I began artificial respiration. Only ninety seconds had elapsed between the first inhalation of nitrous oxide gas and the time the child was apparently dead, and was being suspended and artificial respiration was being practised.

In order to be certain that there was no obstruction in the larynx I passed my finger completely into the chink; finding there was no resistance my finger was passed between the vocal chords into the trachea, which was perfectly relaxed at that time.

After performing artificial respiration the child gasped once or twice, but no pulsation appeared at any time, either at the wrist or in the carotids, nor could we discover any heart beat.

Our efforts at resuscitation were prolonged for three-quarters of an hour; we had already prepared some nitroglycerine, strychnine, and also a 100-gallon can of oxygen; we tried by artificial respiration, inflation, and other means to get oxygen into the lungs and restore the child in this way, but there never was the least attempt on the part of the heart towards performing its functions. The pupils were widely dilated.

I have not read any detailed reports of death from the administration of nitrous oxide gas, and consequently do not know the method of death, except that in this case I believe it was due to cardiac paralysis. I also believe that this child had diphtheria following the attack of measles and that this may account for the cardiac paralysis which followed so soon after the first administration of gas. The amount of gas used in this case was about one-third the quantity it usually takes to produce sufficient anesthesia for such an operation, viz., about three and a half gallons. During an ordinary administration of gas eight or ten gallons are given. In this case I am satisfied that not over one-third of this quantity was given before the child died.

DISCUSSION.

Dr. J. G. SHERRILL.—I was in my office adjoining Doctor Evans's and knew that he was going to operate upon this patient. I heard the child cry once or twice, then the cries ceased. It could not have been more than two minutes until I was called, at which time the child was suspended and Doctor Evans was performing artificial respiration. After I reached the operating room the child made two gasps like respiratory efforts; after that there appeared to be no attempt at respiration, nor was there any evidence of heart-action.

I agree with Dr. Evans that the child died from cardiac paralysis—not from respiratory paralysis, and not from asphyxiation. If the trouble had been asphyxiation the child could not have died so quickly, and had this been the condition I believe the child could have been resuscitated by the means which were employed. In asphyxiation we can restore the function of breathing unless there is paralysis of the respiratory center.

I believe that the child had an attack of diphtheria, and that this was a case of diphtheritic cardiac paralysis.

Dr. JAS. B. BULLITT.—I think the child had a weak heart resulting from diphtheria, and from Doctor Evans's admirable description of the accident it must have been that the child's heart stopped beating before the operation was really begun.

EDITORIAL COMMENTS

Treatment of Acute Pharyngitis

By pharyngitis is here taken to mean any non-diphtheritic inflammation of the pharynx proper, or of the uvula or tonsils. For therapeutic consideration these structures are one, the mucous membrane being histologically almost the same over the tract mentioned.

The treatment is local and general; locally the object is reduction of the swelling and congestion, relief of the pain, and prevention of complications (otitis media, abscess of the tonsil, suppurating cervical glands, pyemia, etc.). General treatment should aim to sustain the strength of the patient and eliminate the toxins.

In the local treatment the remedies that do harm are numerous. It is safe to say that in the early stages of acute pharyngitis any astringent, however mild, is contraindicated. The physician should not content himself with the statements of many text-books as to the tincture of chloride of iron. Some of the most formidable cases of acute pharyngitis the writer ever saw were due to the thoughtless prescription of ferric chloride. One young man, recently under observation, had great exterior swelling of the neck, enormous edema, and congestion of the entire oropharynx, intense pain, high fever, complete anorexia, a generally alarming condition. A physician, he said, had given him "a bottle" some days before, which he had continued to use according to directions till he found he was growing worse. The "bottle" was found to contain almost pure tincture of iron. This drug is a "favorite prescription" of the pharmacist over the counter, and he usually administers it with little dilution. The writer saw an unfortunate Negro girl on the East Side not long ago who had gotten a large abscess of the tonsil from continuing to take a strong preparation of ferric chloride. Some one of her own color, claiming to be a doctor, had given her what looked to be the pure tincture, a teaspoonful every three hours. If the physician still clings to his old iron habit, let him try tincture of the chloride on his own throat when it is acutely sore, and see how it feels. In the long run, particularly with patients one has not seen before, a safe rule is, use no astringent during the first five days. Should the tissues then seem boggy and the circulation sluggish, apply 20 per cent. silver nitrate on a swab, wash it off with salt solution, and see what the effect is later on. In no early case, at all events, should an astringent ever be put into the hands of the patient with directions to use "ever so many hours."

The early local treatment should be simply detergent and antiseptic. In babies, with whom pharyngitis is not so rare as some text-books state, a weak solution of sodium bicarbonate and salt may be given to drink rather freely, with a purge and proper attention to diet. In children old enough to gargle properly, salt, soda, and boric acid gargles do pretty well; but with these as with older patients, the best way of cleansing the pharynx is the douche. Let the patient hang his head over the edge of the bed or of a table and receive the warm solution into his wide-open mouth in a gentle stream from a fountain syringe. This should be done from two to eight times a day, or oftener, according to the conditions. The most threatening cases will often resolve under this treatment with astonishing speed. The outflow from the mouth may be caught in a pus-basin or any convenient vessel; it should be afterwards disinfected with chloride of lime.

The general treatment should be sustaining. "Specifics" are worthless. In streptococcus and staphylococcus throats the general condition is one of simple sepsis, nothing more or less. The infection is often severe, the temperature often running to 105° and 106° F. It is accompanied by irregular chills and sweats, and often disappearing for twenty to twenty-four hours, may reappear and run rather high for a day or so longer. This need not occasion special alarm if the other organs are known to be in good condition. Acute pharyngitis is often capable of enlarging the spleen and causing albuminuria—the former especially in children. The possible renal irritation should be borne in mind, and no food allowed that may overburden the kidneys. A milk diet with suitable stimulation is usually indicated. For the fever, cold baths, or the cold pack, or cold effusions may be employed, not so much for their effect in reducing temperature as for their stimulating influence on the nervous system. As to prophylaxis, all cases of acute pharyngitis should be considered potentially contagious and isolated accordingly. This rule becomes the more imperative when we remember that acute angina is the symptomatic forerunner of many of the acute infectious diseases.

It would transcend too far the limits of an editorial to touch upon the treatment of the complications we have mentioned. They may, in a great number of cases, be entirely escaped by an intelligent prophylaxis. B.

The Babinski Phenomenon

The Babinski phenomenon may be defined as a reflex extension of the toes, particularly the great toe, following stroking of the sole of the foot. This extension may or may not be accompanied by separation of the toes.

Babinski's sign is now generally regarded as indicating disease of the pyramidal tracts when present in adults. In health the normal reflex is flexion of some or all of the toes, on one or both sides. This flexion is absent in about 10 per cent. of normal individuals, according to several writers. L. Walton and W. E. Paul, in the *Journal for Nervous and Mental Diseases* for June, publish their observations upon 700 cases studied with regard to the plantar reflex, special attention being paid to the Babinski phenomenon. They consider that this reflex is never present in health and are inclined to doubt that it is ever present in organic or functional nervous disease, not involving the pyramidal tract, that in *infancy* no constant or characteristic movement of the toes takes place, though *extension* is more common than flexion. Extension of the *foot* seems to be fairly common in infants under one year of age. When the Babinski phenomenon appears in cases not conforming to recognized types of pyramidal disease, this alone would lead to a suspicion of involvement of the pyramidal tracts, as by edema or pressure. This is the explanation of the occurrence of this phenomenon in meningitis, alcoholism, etc. T.

Fresh Butter in the Constipation of Nurslings.—An editorial in *La Presse Medlcale* of June 6, 1900, says that nurslings which are raised on cow's milk frequently suffer from constipation. Where there is no other gastrointestinal complication, fresh butter may prove of service. Nurslings of two and three months receive morning and evening from one-half to one teaspoonful of fresh butter. This amount may be increased to two or three teaspoonfuls administered once each two days to infants who are older. It is said that the butter is readily taken by infants, and a bowel movement generally follows four or five hours after its exhibition. Not only does the constipation disappear, but the secondary effect caused by the stagnation of fecal matter in the intestine are overcome. It is especially valuable in infants who have a tendency to rickets and anemia.—*Medicine.*

CORRESPONDENCE

New York, October 15, 1900.

To the Editor of Pediatrics.

The October number of Pediatrics brings under "Editorial Comments," page 264, the erroneous statement that the women of Syracuse University have during the past year organized the first and only women's medical fraternity in this country.

"Alpha Epsilon Iota" was founded in the University of Michigan in 1890 as the first women's medical fraternity, the Alpha Chapter continuing in Ann Arbor, Michigan, whilst other Chapters have since been organized in several universities.

F. V. Robbins, M.D.

To the Editor of Pediatrics.

Gentlemen.—If the item in regard to the Woman's Medical Fraternity, Zeta Phi, has not gone to press, will you kindly make the correction that it is not the first and only "Woman's Medical Fraternity," one having existed in the West for some time and of which we have but recently learned. Careful examination of fraternity record books had been made before announcement had been sent out, but this one had not been found.

If the correction could be made, you would greatly favor us by relieving the embarrassment of misrepresentations.

Yours truly,

Annie P. Ferris.

College of Physicians and Surgeons.
Chicago, Ill., Oct. 22, 1900.

To the Editor of Pediatrics:

Dear Sir.—I have been requested to write to you in regard to an article published in the October number of Pediatrics, which states "that during the past year the women of Syracuse University have organized Zeta Phi, *the first and only* women's fraternity in this country," etc.

We kindly request that this statement be corrected.

The women of the College of Physicians and Surgeons, Chicago, Ill., were granted a charter for the organization of the Nu Sigma Phi Fraternity in March, 1898.

The purpose of the Fraternity is for scientific investigation and intellectual improvement for medical women.

Respectfully yours,

A. Louise Klehm, Secretary.

The Crisis of Development.—Walter R. Jordan speaks of the periods of birth, dentition and puberty as difficult passes from one tract of mountainous country to another, with a minor crisis during the stage of childhood at seven years. The author urges the young physician in his first months or years of comparative leisure to take up child study—the scientific observation of children. Such study would give a more thorough grasp of the meaning of the developmental period of life, with its peculiar susceptibility to damage, not only throughout, but accentuated at special crises, would throw light on the after effects of the specific and other diseases in childhood; would give greater precision and force to the physician's directions as to the general hygiene of the growing child, hours of work, play and sleep. It would be a guiding influence on all therapeutic measures adopted in cases which development was not preceeding normally. It would introduce system into his estimation of the defects of backward children, and would supply clews to the meaning of the behavior of precocious and unsatisfactory children. It would, when previous personal or family history supplied facts, justify him in making predictions as to the future physical and mental development of particular children; it would thus give him opportunities of instituting preventive measures against developmental failure of body and mind.—*The Birmingham Medical Review*, September, 1900.—*Medical Record*, October, 1900.

SOCIETY REPORTS

PHILADELPHIA PEDIATRIC SOCIETY.

Stated Meeting May, 1900.

Vice-president, Dr. T. S. Westcott, in the Chair.

Dr. L. C. Peter reported a case of **Facial Diplegia Due to Middle-ear Disease.** See *Pediatrics, 1900, X., 361.*

Dr. Hand.—I was very much interested in Dr. Peter's mention of the possibility of facial palsy being induced by a polyneuritis following diphtheria. I have never before seen such a possibility mentioned, and have never heard of such a case. I am interested in knowing whether Dr. Peter, or any other member of the Pediatric Society, has ever seen a case of this character.

Dr. Peter.—I have never seen a case caused by diphtheria and do not remember of any reported in literature. I spoke of the possibility of such an occurrence, however, because it is mentioned by Gowers and, I think, by Dercum.

Dr. Alfred Hand reported a case of **Intussusception** in an infant 4 months old. The attack began with colic and diarrhea and there soon developed vomiting and the passage of blood and mucus from the bowel; the tumor was palpable in the line of the descending colon. Reduction was accomplished by the injection of a pint of salt solution, the syringe being elevated 2 feet above the bed, on which the child's shoulders rested, while the body was held up feet foremost. At the same time the tumor was gently manipulated and disappeared as the abdomen became distended. There was a subsequent enteritis, with signs at one time of a recurrence of the intussusception, which disappeared under the use of opium. Recovery ensued in ten days.

Dr. Jopson.—I saw the case only once, at the time mentioned by Dr. Hand. At that time if recurrence of the intussusception had occurred it had been spontaneously reduced. The child was calm, its expression placid, and there was no tumor. I think that Dr. Hand's explanation of the recurrence of symptoms is a very reasonable one, that is, that there had been an enteritis following the reduction of the intussusception and that this had given rise to secondary symptoms of irritation, the mucus stools, etc.

Dr. Miller.—I should like to call attention to the fact that very often in these cases there is no discharge of blood or mucus and the only signs are those of obstruction of the intestine. Such a case occurred in a child of a friend of mine, a physician in a neighboring city. The patient, a babe of 8 months, was taken ill with severe vomiting and pain in the abdomen, and the condition had become so grave after twenty-four hours that the father decided to operate. Operation was done, and an intussusception was found. At no time during the attack was blood or mucus seen. I believe that cases of intussusception should be operated upon as early as possible. Statistics show that about 40 per cent. are saved if operation is undertaken in the first twenty-four hours, and the prognosis of the operation becomes progressively worse in accordance with the time that it is delayed. If injections are used it should be with very great care, and I do not believe that the height of the water contained should be more than 2 or 3 feet.

Dr. Hand.—The height at which I used the container was 2 feet, but I would call attention to the fact that the child was held by the heels and its hips were therefore somewhat elevated. Consequently, the real fall of the water was somewhat less than 2 feet.

Dr. D. J. M. Miller read a brief report of a **Case of Acute Leukemia in an Infant of Eight Months.**

The case was that of a male infant of healthy parentage who had always been well until 6 months old, when a pustular eruption appeared in the left axillary and mammary region. This healed in four weeks, leaving slightly depressed, bluish white scars, without specific pigmentation.

With the onset of the eruption the infant lost flesh and color, and suffered constantly from digestive disturbances. About a week before it was seen marked epistaxis had occurred. The patient was extremely pallid and feeble, with cold and edematous extremities, and feeble heart and pulse. No evidences of syphilis, rickets, or enlarged lymph nodes could be discovered. The belly was greatly distended, but there was no ascites. The liver extended 2 inches below the costal border. The spleen was enormous, reaching downwards and obliquely, beyond the median line to within 2 inches of the right Poupart's ligament. Its surface was smooth, hard, painful on pressure, and the notch could easily be felt. The blood showed 1,652,000 R. B. C. and 326,500 W. B. C., a proportion of 1 to 5. The red cells were much altered in shape and size. Two days later the house was visited for the purpose of estimating the hemaglobin and making a differential count, only to find the infant had died that morning. No autopsy or permission to obtain specimens of the blood was permitted.

The case was reported with great hesitation, as no scientific purpose is served, and diagnosis is not certain in disease of the blood unless the latter is carefully studied, yet the rarity of leukemia in infants, and the probable correctness of the diagnosis makes the case of interest. In the absence of a blood count, and because of the difficulty in distinguishing blood affections of infancy, the case could not be classified, but it was probably of the spleno-myelogenous type, although the lymphatic variety is more common in childhood and in the acute forms. The possibility of the specific nature of the skin eruption was discussed and dismissed because of the brief and favorable course without medication and the absence of other specific signs in the child or its parents. Attention was called to the acute course—not over 2 months. This is within the limit fixed for acute cases fixed by Ebstein, namely, 9 weeks. This form is very rare in infancy and childhood. Morse only found 6 acute cases at this period, and but one in an infant, while Fussell, Jopson and Taylor could discover no instances below 2½ years.

ABSTRACTS

TUBERCULAR DISEASE OF THE KNEE-JOINT: DIAGNOSIS.

Before treating of the diagnosis of tubercular knee-joint disease a word may be said of the etiology of tubercular joint disease in general. Hilton in his lectures states: "I believe that the diseases of the joints are almost invariably the results of local injury, and that if they were recognized early, and treated by appropriate rest, nearly all of them would get well." This opinion of Hilton concerning its etiology, based on clinical experience, is confirmed by experiments made by Max Schuller, who proved experimentally in animals infected with tubercle bacilli, that a slight traumatism to a joint would determine localization in the injured part, and that a tubercular synovitis or pararthritis would follow. The primal cause of tubercular joint disease is the bacillus tuberculosis already in the system of the patient. The chief diagnostic signs of tubercular knee-joint disease are, limitation of motion, causing lameness, an early sign; enlargement of the joint measurements, in some cases caused by fluid distending the joint capsule, in others by a thickening of the synovial membrane and periarticular tissues; tenderness on pressure, deep seated, in some part or other of the joint; muscular spasm, elicited by attempting passive motion of more or less extent; fixation of the flexed joint from constant muscular spasm. This last untreated results in subluxation of the joint, sometimes as early as the sixth month. In acute cases heat in the joint, felt by placing the hand upon it, is a prominent clinical feature. In the slow insidious form heat is sometimes absent. The older name of the disease—tumor albus—signifies a clinical feature in the more chronic form of the disease. The whiteness of the skin is caused in these cases by its distention. A feature of the chronic disease, a filling out of the popliteal hollow, has been noted, so far as I am aware, by one surgeon only—Colles, of Dublin—who taught half a century before orthopedics became a specialty. Some cases of tubercular synovitis are so acute as to simulate traumatic synovitis. The majority of cases are, however, of an insidious nature, so that not rarely do we meet with the disease thoroughly developed and a diagnosis very easy.

The treatment of incipient tuberculosis of the knee-joint is rest and protection for the diseased joint and thorough constitutional treatment. Joint rest is to be had by immobilizing the joint. This is not attained by the methods commonly employed. Absolute fixation of the knee-joint is easily obtained by bandaging on the limb splints moulded upon it and made from wood-plastic material. This material is applied directly next the skin and there is no padding whatever to impair its fixation properties.*

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* See article in the *Boston Medical and Surgical Journal*, Aug. 31, 1899, entitled, "A Safe and Quick Method of Joint and Bone Fixation."

The wood-plastic material, when suitably cut and moistened with water can be moulded and bandaged upon the limb, producing immediate fixation.

Besides fixation protection is necessary, i.e., the joint should not be allowed to bear weight. Rest in bed would solve the protection problem, but such recumbency would violate what has been set down as an essential—the constitutional treatment. This treatment requires that the patient be out in the fresh air and sunshine as much as possible. Therefore, only in cases of double knee-joint disease is recumbency to be considered, and even in these cases a box-cart can be easily constructed that will enable the child to get fresh air and amusement without inconvenience.

There aro two methods of giving protection to the knee-joint during locomotion. One is the use of crutches, the other is the use of a Thomas knee-splint. In both methods a raised-sole shoe is used on the foot of the sound limb to raise the patient so that the diseased limb will not reach the ground. Children over five years of age can generally get along with the use of crutches. Younger children do better with the Thomas splint. This well-known contrivance transmits the body weight from a collar encircling the groin to a ring under the foot by means of iron rod uprights, one on the inside the other on the outside of the limb. When properly applied no weight is borne by the diseased joint in locomotion.

Often when the patient is brought to us with acute tuberculosis of the knee-joint, the knee is already fixed in a flexed position. We can straighten such limbs gradually or at once. In the latter case an anesthetic should be given. Immediately upon its reduction wood-plastic splinting can be bandaged upon the straightened limb and its corrected position maintained. In case a gradual reduction be decided upon, and this is often preferable, because the gentler method, the limb can be mechanically fixed with a wood-plastic splint moulded upon it in the position we find the limb. The correct shape of the splint-blank can be obtained by cutting a piece of paper in such fashion that it will be along the inside of the limb and embrace it from near the perineum to the ankle. The splint-blank cut after this pattern is moistened with water and bandaged snugly to the limb. After the joint is thus kept quiescent for ten days upon the removal of the splint it will be found that the angle of extension of the knee can be increased several degrees. The joint should be fixed in its new position by means of a newly moulded splint, and every ten days or so the process should be repeated until the limb is straight.

Constitutional Treatment.—The diet is important. No tea or coffee. Boiled milk, graham bread, fresh meats, well cooked greens, and fresh eggs *ad libitum*. No cakes or candies between meals. Both can be allowed at meals, that is after the substantial portion of the meal is finished. They are then food. Plenty of sunshine and fresh air. For medicine twenty to thirty drops of Merck's beechwood creosote can be given, mixed well in a large glass of sweetened water, three times a day. The urine of the patient should be noted while giving this medicine, and if it becomes dark green in color, the medicine should be stopped. This medicine may have a detrimental action upon the bacilli; but of its therapeutic value in joint tuberculosis I am not prepared to treat. When given as directed, and its administration watched, it is harmless, if not really beneficial.

It is necessary to treat tuberculosis for a period of two years, generally; the milder cases in the fairly robust get well sometimes in the short period of six months. The return to the functional use of the joint must be tentative and gradual. The raised sole can be lowered and some weight be allowed to bear on the affected limb. After careful watching the splints can be removed and more latitude allowed in the use of the joint. Should signs of tenderness in the joint recur, fixation and protection must again be resorted to until all signs of trouble have subsided. Then again a tentative use of the joint may be permitted. The case should be under further observation for a year.

Diagnosis and Treatment of Tubercular Hip-Joint Disease.

Diagnosis.—The early diagnosis of hip-joint disease depends, for the most part, upon a delicate manipulation of the suspected limb, and in some cases is not easy. Limitation of the normal motions of the hip-joint is the chief diagnostic mark. Hilton did not give this sign the prominence it merits, though he recognized it, for he states (p. 354, Rest and Pain, London, 1896): "Recently I saw a lady who was thought to have hip-joint disease on the right side. I examined the hip-joint, and there was certainly nothing wrong; it might be rolled about in every direction without pain." This limitation of motion is due to involuntary muscular spasm, caused reflexly by irritation in the joint. Therefore when examining a child its confidence must be won, so that the little one becomes passive during the examination. Otherwise it will be impossible sometimes to distinguish between the voluntary and involuntary muscular action of the child. The child should be examined stripped, lying upon a padded table, or upon a mattress. With the child lying upon its back, the motions of flexion, adduction, .abduction, and rotation of the thigh flexed at right angles to the body, may be tested and compared with the same motions in the normal limb. Limitation of the motion of extension is best obtained by having the child lie upon its belly. With one hand grasp the leg and bend the thigh upwards, while the other hand rests upon the sacrum to determine by its motion when the extension of the hip-bone ends and the pelvis commences to move with it. Comparison should be made with the extent of extension obtainable in the other limb. Any limitation of motion is pathognomonic of hip-joint disease, and the case should be treated as such.

A limp in walking is another early sign of hip-joint disease. It is always present, but sometimes in a degree so slight as to be hardly detectable. Gibney briefly gives the other signs and symptoms of incipient hip disease as follows: "Change in nates, flattening for instance; loss or shortening of the ileo-femoral crease, atrophy of the limb, periarticular tenderness, night cries, the typical scream, a history of an insidious invasion, and persistence of the limp."

While the diagnosis generally is easy, in some cases it is extremely difficult to differentiate a case from Potts' disease. In some cases of Potts' disease, those where irritation of the psoas muscle is prominent, we have a marked limitation of the motion of extension in the hip. In such cases deep palpation, with the thighs flexed, will generally demonstrate an abscess, even when quite small (Gibney). In Potts' disease there is also lumbar rigidity—only exceptionally present with a very acute hip disease. Simple synovitis of the hip-joint is very rare in children; its treatment is that for early hip-joint disease—fixation.

Rheumatic synovitis is rarely present in the hip-joint alone. A comparatively high temperature and pulse are the differential features.

Poliomyelitis rarely simulates hip disease. There is pain, tenderness, and immobility of the whole limb. There is a quick atrophy of it, and in the later stage of the disease no limitation of motion, but abnormal mobility in all directions.

Treatment.—It has not to my knowledge been remarked, but it is none the less a fact, that the hip-joint is a much smaller joint than the knee-joint, and consequently there is a smaller field for the development of disease. It would appear therefore that incipient tubercular disease of the hip-joint should be at least as amenable to treatment as knee-joint disease, if not more amenable.

The essentials of treatment for tuberculosis of the hip-joint are the same as for the like disease of the knee-joint—fixation, protection, and constitutional treatment. Some orthopedists add traction, but it is only necessary to reduce the deformity present in acute cases and due to spasmodic contractions of the muscles. Traction, applied by means of a weight and pulley attached to a bedstead raised 10 inches at its lower end is serviceable in these cases. This is the simplest method of applying it. As soon as the limb is straightened there is no further need of traction. Fixation is then the necessary treatment.

A simple and efficient method of obtaining it will be described further on. We quote Bradford and Lovett, upon the plaster of Paris method of treatment: "Plaster of Paris bandages furnish an imperfect form of fixation, as they do not firmly hold the trunk above the pelvis and owing to the possible motion of the lumbar vertebra, the pelvis is able to move within the bandage, allowing motion at the acetabulum and distortion of the limb. . , . Furthermore, the method is a clumsy and uncleanly one. . . . This method of treatment is only to be applied as a temporary measure and is not satisfactory when continued over any length of time." The writers are correct in regard to the poor fixation furnished by a plaster of Paris bandage. They omit to mention, however, the chief cause for the poor fixation, and that is the swathing of the limb and body in cotton batting before the application of the plaster bandages.

With wood-plastic material an efficient fixation of the hip-joint can be easily produced. The technique is as follows: A piece of strong paper is cut so that it embraces the side of the body above the affected hip and the thigh, the pattern extending from just below the axilla to the knee. The posterior edge of the pattern should lie against the back and cross over the buttock and pass along so as to lie over the inner aspect of the thigh. The anterior edge should lie almost to the middle line of the body and pass over the middle third of Poupart's ligament and pass somewhat inwards and along the junction of the anterior and inner aspect of the thigh. This paper pattern can be laid flat upon a sheet of wood-plastic material and the correctly shaped splint-blank can be cut from it. In splinting the hip a double splint-blank is advisable. The two blanks can be moistened with water, not soaked, and laid together and then bandaged snugly upon the body and thigh, thus producing an efficient fixation of the hip-joint. The manner of bandaging this splint form upon the body is important. The roller should be applied first so as to embrace the body around both hips for several turns, then turn in figure of 8 style around the splinted thigh and body, then down the thigh; finally, a bandage should be be supplied around the body and upper part of the splint.

Protection is furnished the immobilized hip-joint by keeping the child's limb off the ground, as by the use of crutches and a raised shoe. The constitutional treatment is the same as that already described for a patient with knee-joint disease. Treatment in an incipient case should last from one to two years. The return to the normal use of the joint should be tentative and gradual. following in similar lines the plan already described in the treatment of knee-joint disease. Edward A. Tracy M.D., abstract of paper presented to the American Medical Association, Section of Children's Diseases, June 5, 1900.

Emetic for Children.

℞	Pulv. ipecacuanhæ	gr. viiss.
	Antimonii et potassii tartratis	gr. ⅙
	Aquæ destil., q.s. ad	℥i

M. Sig.—One teaspoonful every ten minutes until vomiting is produced.

Lumbar Puncture and the Injection of Antitoxin Serum into the Cerebrospinal Fluid.—In the *Centralblatt fur innere Medicin* for September 15th, Dr. Einhorn, of Munich, remarks upon a case of tetanus of moderate severity, an account of which is given by Dr. F. Schultze, of Bonn, in *Mitteilungen aus den Grenzebieten der Medicin und Chirurgie*, v. 1. It is remarkable, says the article, that after the injection the tetanic condition extended to muscles which had not before been affected. The remark is made that the procedure, which was followed by recovery in the case reported, seems preferable to injecting the serum into the brain, and relatively large amounts may be used when it has been found by its subcutaneous employment that it does not cause fever or inflammation.—*New York Med. Jour.*

FOREIGN PEDIATRIC JOURNALS.

Abstracts of all Original Articles that Appear in Foreign Journals Devoted to Pediatric under the direction of George Alexander Saxe, M.D.

REVUE MENSUELLE DES MALADIES DE L'ENFANCE, August-September, 1900.

This number contains a summary of the work of the Sections on the Medical and Surgical Diseases of Children of the Thirteenth International Medical Congress held in Paris, August 2 to 9, 1900.

1. **The First Question—Artificial Feeding.**

(1). Dr. A. Jacobi, New York, vid Pediatrics, Vol. X. No. 9.

(2). Dr. O. Heubner, Berlin.—We must look to the healthy infant for the kind of diet or artificial feeding to be prescribed in health. The trouble heretofore has been that physicians had mostly to do with sick children whose diet must be different from that of healthy babies. Cow's milk must be the basis of all artificial feeding in the healthy infant. In fact, cow's milk is just as digestible as mother's milk only it requires more work on the part of the digestive organs on account of the nature of the proteids. In compounding the various mixtures we must always bear in mind the normal standard of nutrition of the infant which requires a certain quantity of proteids, carbo-hydrates, fats, and mineral matters. Sterilization is an important advance in the field of artificial feeding. It is sufficient for ordinary purposes to heat the milk to 100° C. for five, at most, ten minutes. Milk that has been heated for twenty-five minutes at 65° C. seems to be perfectly sterile and yet does not lose its normal flavor and nutritive value (Forstor).

If we have to deal with a dyspeptic infant it is a different matter. According to the latest researches it is not the proteids that present the greatest digestive difficulty, but the fats. This fact is also confirmed by what is found in adults under similar conditions, but a too great proportion of nitrogenous substances may also become dangerous, and even the sugar, if it is not perfectly oxidized, may give rise to digestive difficulties. Therefore, we must reduce the amount of proteids and fats by diluting the milk with water and in order to compensate for the loss of energy we must add some sugar until the amount corresponds to that found in mother's milk. In order to increase the carbohydrates still further we may add cereals. Predigested milk may also be used, such as peptonized milk, Veltmer's milk, Backhaus's milk, etc. Other methods of modification leave the fat in the same quantity as it is in mother's milk, e.g., in Gaertner's fat-milk, in the cream mixtures, etc. Instead of milk sugar, maltose has also been used, as in Liebig's soup, Keller's malt-soup, etc.

After all, in grave cases of disease we have to return to mother's milk if all the methods of artificial feeding fail.

(3). Dr. MONTI, Vienna—Laid down the following rules for scientific preparation of an artificial equivalent for mother's milk. 1. The acidity of the artificial food must be the same as that of mother's milk, This can be accomplished by reducing the acidity of cow's milk until it equals that of human milk by the addition of carbonate of potassium. 2. The coagulation of the artificial food must take place in the same length of time and in the same manner as that of mother's milk. This may he secured by a mixture of equal parts of cow's milk and whey and by adding potassium carbonate to reduce the acidity. 3. The quantity of proteids must be reduced by dilution with whey and the relation between the casein and the soluble proteids of woman's milk is thus reproduced. 4. The casein of mother's has a different relation to the salts and acids than that of cow's milk, and this difference is removed by the addition of sufficient quantities of soluble albumin and alkali. This can be partly secured by dilution with whey. 5. The quantity of fat should be the same in cow's milk and mother's milk. Simple dilution with water diminished the percentage of fats and the addition of fat is rather injurious because it produces an excess of fatty acids in the intestines, for the fat of cow's milk contains more fatty acids than that of mother's milk. By diluting the cow's milk with whey we can produce a mixture containing 2 per cent. of fat, a quantity which amply suffices for artificial feeding. 6. Addition of sugar is inadvisable, but the dilution with whey is sufficient to increase the amount of sugar to the requisite point. 7. The quantity of salts contained in cow's milk cannot be changed by any procedure, but this is not an important disadvantage. 8. Sterilization may be accomplished by heating to 60° C. for ten minutes and by keeping the milk at 6°. 9. The dilution of cow's milk with whey fulfils the requirements of artificial feeding better than any other method of modification.

(4). Dr. G. VARIOT.—Sterilized Milk in Large Cities. In large cities it is better to import the milk after it has been sterilized at the place of shipping. On a large scale such sterilization is conducted in special apparatus. One method consists of heating the milk to 115° in bottles holding ¼ to ½ liter each. The bottles are then hermatically sealed with paraffined corks and can be thus kept for two weeks without any fermentation in the milk. The milk thus sterilized in large quantities can be handled very easily, much more so than if Soxhlet's apparatus is used with its large number of bottles. It has been shown that the majority of nurslings bear pure milk after the age of three months, and the danger of an excess of proteids, etc., is very greatly exaggerated. In the first three months it is enough to dilute the milk with one-third or one-quarter of boiled water with the addition of a little powdered sugar. By this method not only have the children been raised successfully, but the author has succeeded in feeding 300 infants who had presented deficiencies in the weight curve. In over 800 nurslings thus fed he has not seen a single case of Barlow's disease; rachitis was also very rare, but it was usual to note a chronic constipation and a marked anemia.

(5). Dr. AXEL JOHANNESSEN, Christiania.—Milk sterilization. The best method of destroying the germs in milk without altering its character is Pasteurization at about 70° C. Control of the animals and of the dairy is important in order to obtain initially a comparatively pure milk. The milk must be kept at a temperature below 18° C. after Pasteurization and must be used in twenty-four hours. Cow's milk in commerce is a more uniform article than mother's milk, which varies greatly in composition at different times and under different conditions.

Dr. Edwin Ricketts, of Cincinnati, is an enthusiastic follower of the late Lawson Tait as an advocate of soap and hot water, energetically applied, as antiseptic agent; and he also prefers bedside operations rather than the elaborate fixtures of a hospital, as does Dr. Joseph Price. In a recent article Dr. Ricketts remarks: House-to-house isolation, and for this the room-to-room risks of infection in a hospital are lessened to a minimum degree. Surgical cleanliness is surgical godliness, and every time we forget this we add to our death-rate. Chemical perfumes of varied kinds will never displace soap and hot water judiciously applied in surgery.—*Am. Jour. of Surgery and Gynecology.*

PEDIATRICS

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VOL. X. DECEMBER 15th, 1900. No. 12

ORIGINAL ARTICLES

THE ABORTIVE TREATMENT OF PNEUMONIA. CATARRHAL AND CROUPOUS, IN INFANTS AND CHILDREN.*

By H. ILLOWAY, M.D.,
New York.

Formerly Professor of Diseases of Children, Cincinnati College of Medicine and Surgery; formerly Visiting Physician Jewish Hospital, Cincinnati; Fellow of the Academy of Medicine, etc.

CAN a pneumonic process in the infant or child be arrested at its outset, aborted? There can be no doubt that many physicians of the past generation, men of large clinical experience and of intimate knowledge of the materia medica, its agents and their powers, believed that in many instances the disease process could be arrested at its outset, jugulated—as they preferred to call it. Since then, the views both as to etiological factors and the pathology of disease processes and as to the effectiveness of medicines have undergone great changes, and if the question were propounded to-day to this distinguished assembly of physicians, learned in all the ills and ailments of the homunculus, I am almost certain the answer would be a unisono "No." A review of medical literature up to a recent date gives us an equally emphatic "No." Continental authors have not even dreamed of such a possibility, and our own writers either ignore it altogether or dismiss it briefly as the vagary of ignorant past. The author of the article "Broncho-Pneumonia" in Keating's Cyclopedia of Diseases of Children[1] says very plainly and emphatically: "The *disease cannot be cut short by any means at the present time.* To nourish the child, make it as comfortable as possible, and promptly use appropriate remedies in such emergencies as may arise, should be the chief aim of treatment."

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*Prepared for the Pediatric Section of the A. M. A., for the meeting at Atlantic City.

Nevertheless, this question so old will not down; nay, despite all the marked changes in men and views referred to, it comes forward time and again most unexpectedly and crowds itself upon the thinking mind. Thus the author of the article "Pneumonia" in Albutt's System of Medicine,[2] a work bearing date 1898, under the heading of *abortive treatment*, says: "There is nothing absurd in supposing that this may one day be done. We do cut short the manifestations of syphilis and ague, of hydrophobia and of diphtheria," though it is true that at the outset he admits that at present he knows of no means wherewith this could be accomplished.

From my own experience I should answer the question affirmatively. I am certain that in infants and children the pneumonic process can be arrested at its outset, and more than that, that we have the means and have long had them, wherewith to do it. To demonstrate this to you, the object of this paper, I now present to you certain clinical facts, plain and unvarnished, the histories of some cases as written down at the time of their occurrence, or immediately thereafter.

GROUP A.

Case 1.—*Broncho-pneumonia.*

A. M., aged 9 months; breast fed. Stout healthy boy; has enjoyed excellent health almost uninterruptedly, from the day of his birth up to the present time. Father, healthy; mother, stout, robust, hard-working woman. Other children all healthy. Hygienic surroundings, good; family in easy circumstances.

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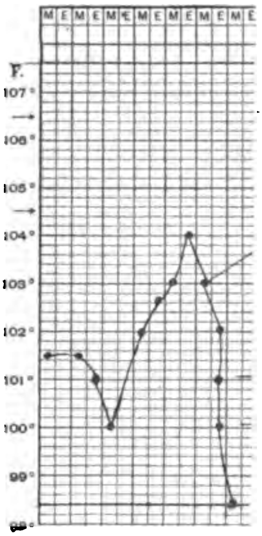
[1] Vol. II., page 638.

[2] Vol. V., page 121.



Group A. Case I.

April 10, 1876. I was sent for this morning to see the baby. Found him lying on his mother's lap, crying rather peevishly. Coughs at frequent intervals, a short dry cough which seems to be very irritating to him, as he cries after every coughing spell. I was informed that the baby had been coughing for a few days already, but as he did not seem very much affected thereby, it was supposed to be but a slight cold that would soon pass. Last night, however, he was quite restless and wanted to be put to the breast every little while, though in reality he did not nurse much. Temperature (in axilla[1]) 101½. Percussion shows nothing abnormal. Auscultation: respiratory murmur in interspace rather harsh; Sonorous rales and a few mucusrhonci.

Diagnosis: Bronchitis involving larger bronchi only.

Treatment: An expectorant mixture, composed of spirits of Mindererus, sweet spirits of nitre and syrup of ipecac. A liniment to be rubbed in morning and evening, posteriorly, over the interscapular space and down, just on either side of the vertebral column, as far as the 9th rib, and anteriorly over the supramammary region of both sides.

April 12th. Temperature 100. Child brighter and cough looser and easier.

April 13th. Temperature 102; face flushed; child rather somnolent; cough again dry, harsh and irritating, as he cries a little after each paroxysm. When put to the breast he will suck for a minute or two and then let go again, cry a little or give a short cry, and then take hold again for a few moments. The cough also interrupts his nursing. Quinine grs. ii every 3 hours.

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[1] All temperatures referred to in this and the following histories are axillary. Thermometer allowed to remain in the axilla full 5 minutes by the watch.

6 p. m. Temperature 102¾. He lies quietly in his cradle, with eyes closed most of the time. Does not seem to care to nurse.

April 14th. Temperature 103. He was fairly quiet during the night, coughing occasionally and crying immediately thereafter. He was put to the breast twice, but did not nurse much.

Percussion did not show anything. Auscultation: Respiratory murmer in interscapular space still somewhat harsh. Sonorous rales and some mucus rhonci in larger bronchi. On the right side, posteriorly, over the lower lobe of right lung, sibilant rales are heard; not so marked on the left side, but a little higher up and more forward, toward the side of the body. 6 p. m. Temperature 104. Capillary bronchi involved.

The remedies hitherto administered having failed to produce any effect, it was apparent that something else had to be done if the child's life were to be preserved. The principal thing to do, it seemed to me, was to arrest the fever, as the fever seemed to be consuming the child at a rapid pace. But how? With what? After studying the various remedies said to possess marked febrifuge properties, and talking it over with a country practitioner of large experience whom I happened to meet, I determined upon the course to be pursued if no amelioration were evident the following morning, and I, accordingly, provided myself at once with a small quantity of tincture of veratrum viride and of the tincture of aconite root, in separate vials.

April 15.—Temperature 103 plus. Child lies in a torpor, aroused only by the cough; has nursed hardly any in the last twenty-four hours; when put to the breast he takes hold if the nipple be put in his mouth; will suck for a few seconds and then let go again; cough rather dry.

Percussion.—Considerable diminution of resonance about lower right lobe, posteriorly; not elsewhere. Auscultation: posteriorly; sonorous rales, and some mucous rhonci; sibilant rales on right side; some few on left side, as already noted; anteriorly some mucous rales in infra-clavicular regions and seem more marked on left side, broncho-pneumonia.

With a glass of water, measuring a certain number of teaspoonfuls into an empty tumbler, I prepared a mixture of the two last-named remedies, so that each teaspoonful of water contained about three-fourths of a drop of the tincture of veratrum viride and one-fourth of a drop of the tincture of aconite, and directed that a teaspoonful be given the baby every hour and a half.

As I had some misgivings as to the action of these powerful agents upon the child, I instructed the mother that if the child should vomit or its hands grow suddenly cold, she should at once stop the medicine and give the baby fifteen drops of whiskey every half hour until I came in again. 1 p.m., temperature 102°; 4 p.m., temperature 101°; child looks much brighter; epes open; has nursed once (about 2 p.m.), and better than at any time since his illness. He let go a few times, but soon took hold again and that with seeming avidity.

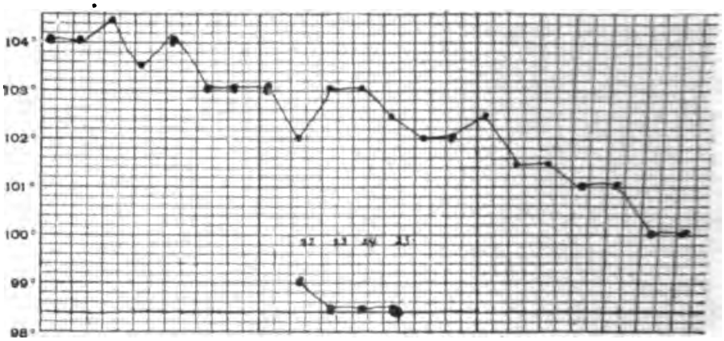
7 p.m., temperature 100°. He has nursed again since last visit, and that quite long.

April 16.—Temperature 98½° He lies quietly in his cradle, eyes open and bright; he slept well, but nursed twice during the night. As I approached the cradle to look at him he smiled, but was apparently too weak to move about much. The medicine was omitted for a time and a mild expectorant mixture (spirits of mindererus, syrup of senega, and syrup of tolu) prescribed.

There was no further rise of temperature, and the child progressed rapidly to health. The cough continued for about ten days longer, growing less and less frequent, and at the end of that time ceased altogether. From the time of the disappearance of the fever the child began to pick up and he was soon his former self again—stout and chubby.

Case 2.—Broncho-Pneumonia (first attack).

R. S., female, age 4 years; parents, of the laboring class; both healthy. The father makes good wages, and the children are amply supplied with good food; the dwelling-rooms also fair; the sleeping apartment somewhat objectionable; it is a middle-room, though large, and four children sleep therein. The other children are all healthy and strong; the little girl is very sprightly and has been in fairly good health, though inclined to take cold easily and to cough; when a year and a half old she had summer complaint and was given too much calomel (mother's story). At 3 years, while on a visit to some relatives in the country she contracted measles; since then this tendency to cough.



Group A. Case II. First attack.

October 10, 1874.—I was sent for to see the little girl. I learned that the child had a cough for about ten days. The cough was not severe, the child being up and about; the appetite was fairly good; at night she slept fairly well, not being disturbed much by the cough; the night before last she wanted to drink more frequently during the night, and seemed to be disturbed more; last evening she had very high fever, "burning up," her mother said; she was very restless, and wanted to drink every little while. Temperature this morning 104°. Face flushed; on left side a marked hectic flush on cheek; lips dry; tongue very dry; no appetite; will take nothing but cold water. Cough rather dry and frequent; child lies quiet in its cradle in a seemingly somnolent state; eyes closed; is aroused only by the coughing spells and cries a little before and just after each one.

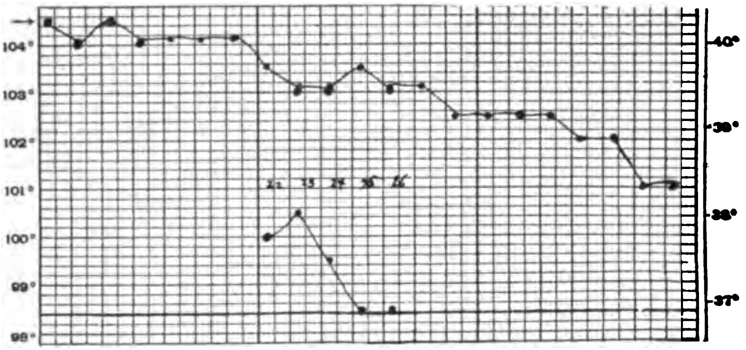
Percussion. — Diminished resonance posteriorly about right lower lobe. Auscultation: Sibilant rales heard posteriorly; on the right side about right lower lobe near to its lower border; on the left side just below inferior angle of scapula; respiratory murmur over interscapular space rather harsh; sonorous rales and some mucous rhonchi on both sides. Anteriorly nothing especial except some mucous rhonchi in the upper part of the chest in the supramammary region and seemingly more pronounced on the left side.

Treatment.—Quinine in acid solution, grs. ii every three hours. An expectorant mixture of carbonate of ammonia in mucilage and syrup every three hours. A liniment as a counterirritant to be rubbed in over the back, the sides, and the upper part of the chest morning and evening. The body to be sponged with lukewarm water and vinegar every four hours. Give cold milk with a little cold coffee (if she will take it), cold beef essence alternately, at least every four hours. Ten drops of whiskey with water and sugar every three hours.

After some days the morning temperature showed a decline, then remained stationary again for some days, declined again, and finally on the twenty-second day of her illness the temperature was down to 99° and on the twenty-third day to 98½°, at which it remained. In about ten days the child got out of bed and gradually gained in flesh and strength and recovered perfectly; lungs fully cleared up.

Case 2.—Broncho-pneumonia (second attack).

R. S., now in her eighth year; going to school. Since her recovery from the attack of bronch-pneumonia the child has been well, with the exception of two or three colds followed by a slight cough, which soon passed away.



Group B., Case II (second attack);

About New Year's day, 1878, she was out much of the day playing about with the children. In the evening some fever and a slight cough. The next morning she was better and went to school; the cough, however, grew severer, dryer; she could not spit up, as her mother said. She was treated with home remedies and with preparations obtained at the drug store.

January 8th she was again very feverish at night, and wanted to drink much; cough very dry and irritating; that night she did not sleep well; next morning the 9th, got up but not as well as before; she did not want any breakfast, could not drink her coffee, but took a little milk and water; at night again very feverish; next day, the 10th, she did not get out of bed.

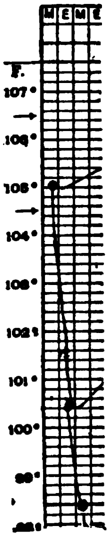
January 11.—I was sent for; the little girl was lying in bed very quietly in a very somnolent state and responded to questions very slowly and with eyes closed; she is very thirsty and asks frequently for water; lips dry, tongue very dry; face much flushed; coughs frequently and says it hurts her; cough dry; temperature this morning 104½°.

Percussion.—Back, in the right side, beginning at about the inferior angle of the scapula there was noted a marked diminution of resonance amounting almost to dullness. This extended downward about three fingers in breadth and reached forward on to the side of the body to a line falling from the posterior half of the axilla; left side, nothing particular. Auscultation: back; respiratory murmur somewhat harsh in interscapular space; sonorous rales on both sides, occasionally a mucous rhonchus; sibilant rales, more on the right side and more marked near region of diminished resonance on percussion; tubular breathing not certain of. Anteriorly: Vesicular murmur rather intensified; some mucous rhonchi over supramammary region of both sides; in the mammary region of right side some sibilant rales.

Treatment.—A repetition of that ordered in first attack, only that the quinine was now given in 3-grain doses. Food: Condensed milk with barley water (cold); beef essence (cold); whiskey, 15 drops with water every three hours.

The course of the disease was about the same as in the first attack, lasting, as shown by the chart, about twenty-five days. At the end of this period the temperature had become normal and continued so. Complete recovery was much slower than after the first attack, and she required roborants, as the syrup of the iodide of iron and cod liver oil, and cod liver oil with the iodide of iron. It was fully three months before she could be declared fully recovered. After this attack, as before, the lungs cleared up nicely.

Case 2.—Broncho-Pneumonia (third attack).



Group A
Case II
Third attack

R. S., now 11 years old; very bright little girl, very lively, very playful. Goes to school and studies well. She has enjoyed good health since last attack with the exception of occasional colds and coughs, the tendency to which she has not lost, or such trifling ailments as a headache from over-exercise or over-eating. She is in good flesh, rather plump.

May 5, 1882.—I was sent for to see the little girl, who, as the messenger said, was again very sick. I found her in bed; face flushed decidedly; eyes closed; in a very somnolent state. Answers questions very slowly and not very clearly.

She had taken cold once more a few days ago and at once began to cough in a harsh, dry way. On the evening of May 4th she would not play with the children, as she was usually wont to do. She did not want any supper, took only a little weak coffee. She said she could not study her lessons, and went to bed immediately after supper. She slept very restlessly that night, and tossed about much, asking frequently for water and wanting it very cold. Her lips are dry, tongue dry. Temperature 105°; coughs frequently, a harsh and dry cough. She says it pains her greatly to cough.

Percussion, anteriorly, discloses impairment of normal resonance (submatitè) over left lung from sixth intercostal space downward. On the right side, just below the inferior angle of the scapula and downward, a rather small and circumscribed region of dullness. Below that region and around it resonance louder, more normal. Anteriorly, no change is noted.

Auscultation.—Posteriorly, respiratory murmur in interscapular space somewhat harsh. Sonorous rales and mucous rhonchi; sibilant rales on both sides. In the region of dulness on the right side a crepitant rale clearly made out. Anteriorly, vesicular respiration somewhat more intense in the upper part of the thorax. Sonorous rales, and here and there a mucous rhonchus. Sibilant rales in the left side on a line just a little below the nipple between the anterior and posterior axillary lines; none in the corresponding region of right side.

Broncho-pneumonia with a tendency to more extensive involvement of the lung than in any of the previous attacks.

In this attack the treatment was changed. A few days before I accidently came across the history of case No. I, which had entirely escaped my mind, and I determined to put R. S. upon the same treatment.

I accordingly made a prescription as follows:

℞ Tinct. verat. virid. (Norwood's).....gtt. vi
Tinct. aconit. Rad..................gtt. ii
Aq. distill.
Syr. tolutan........................āā ℥ss
M. Sig.—Give as directed.

The directions were to give one teaspoonful every half hour until five doses were taken and after that one teaspoonful every hour until I saw her again. The time of my visit was about 10 a.m. The administration of the medicine was begun about 10.45.

As in Case 1, I left instructions in case that vomiting should set in or the child grow cold suddenly.

At 5. p.m. I saw the child again. To my suprise she was walking about the room sprightly; said she was feeling well. She wanted to get up and help her mamma. Temperature, 100½°.

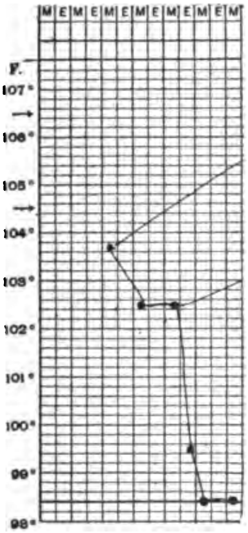
I directed the mother to continue the medicine, giving it every two hours till night and every three hours during the night if the child awoke.

May 6.—Child is up and about; feels well, and wants to go to school. She ate her breakfast (coffee and rolls) with great relish. She received the medicine yesterday after my second visit, every two hours until 9 p.m., when she fell asleep. Her mother, working hard all day, seeing the child sleeping naturally and soundly also retired without further ado and slept all night, thus no medicine was given during the night. Temperature 98½°; cough, loose and easy. The medicine to be omitted. Prescribed a mild expectorant of ammon. carb., syr. seneg.. and syr. tolutan, to be given every three hours.

May 7th. Child doing nicely; she was up bright and early. Temperature 98½. Continue the cough mixture as long as necessary, lengthening the intervals between the doses as the cough becomes less frequent. Also told the mother that the child must be kept in the house for at least another week. At the end of ten days the mother came up to inquire whether the little girl could go to school, as she was fretting at home. She has been well since my last visit. No more cough since the last 3 days.

Case III.—Broncho-pneumonia.

Baby P., male child, aged 15 months; small and puny-looking; breast-fed. Parents both healthy and of good size; have been for some time in rather straightened circumstances. During her last pregnancy the mother had to work very hard and was but poorly nourished. Other children healthy. The baby was rather small at birth, but with the exception of a cold or two, has enjoyed good health.



Group A. Case III.

I was called to see him February 22, 1885. He has had a cough since 5 days, which has gradually grown worse. He is very peevish, at times breaking into short cries; he is very restless and wants to be changing his position every little while—now into the cradle, now on to his mother's arm. He does not nurse well; takes hold of the nipple, sucks for a few minutes and lets go, either crying or coughing; after a little while he will take hold again, and the process as just related is repeated. Temperature 103¾ at 2 p. m. Hectic flush on cheek. Cough harsh, dry, irritating.

A satisfactory physical examination could not be made, as the child was very irritable, as described, and would not hold still for a second. In the hasty examination made while he hung partly over his mother's shoulder, I heard sonorous râles and noted sibilant râles on the left side just below and back of the inferior angle of the scapula. Diagnosis: Broncho-pneumonia. Prescribed:

℞.	Tinct. veratr. virid. (Norwood's)	gtts. vi
	Tinct. aconit. rad	gtts. ii
	Aq. distill	ʒ v
	Syr. tolutan	℥ iij

M. Sig. One teaspoonful every hour and a half.

February 23. Temperature 102½. Pulse 130. The mother said she did not get the medicine till late in the evening, and did not give but four doses; the child being quieter than usual, and she being very tired from attending both to the store and her household duties, she slept almost the whole night through. Cough a little looser. Insisted upon the medicine being given regularly, as directed.

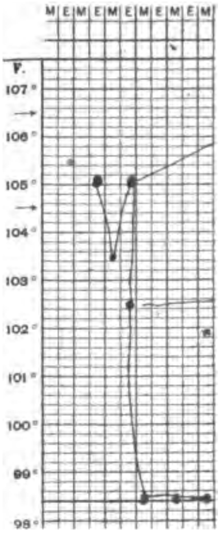
February 23. Temperature 102½ (morning). The child had received but little medicine yesterday, and that at irregular intervals, as she had to attend to the store, her mother would be over in a little while and she would give the medicine promptly and punctually.

To convince myself. and for the baby's sake, I called again that day about 8 p. m. I found the grandmother there at the baby's cradle, and she assured me that she had given the medicine regularly and at the precise time since 11 a.m. Child lies quietly in its cradle: the hectic flush has disappeared. It coughed while I was observing it, and the cough was much looser and cansequently easier. Temperature 99½.

February 25th. Temperature 98½.

A few days later the cough had entirely disappeared. There was no further rise of temperature.

Case IV.—Croupous Pneumonia.



Group A. Case IV.

S. F., girl of 11. Jewish parents, Russian. Very bright; she goes to school and is far advanced for her age. Parents both healthy. General surroundings as good as can be expected in a large tenement house.

June 10, 1889, about 7 p.m., I was sent for to come and see her, and reached her bedside about 9 p.m.

The girl had been well all along, and had been to schoolto-day. In the afternoon, after school was dismissed, she came home and complained that she did not feel well and in the evening went to bed without any supper. Temperature 105. Asked if she had any pain anywhere, she pointed to her left side about the 8th and 9th rib in the region between the two axillary lines, and said it hurt her there, but not very much. Asked if she coughed, she said only a little. Feeling very much fatigued myself, and the room being stifling hot, I contented myself with a superficial examination, which disclosed nothing further and prescribed antipyrin grs. x, to be followed in 5 hours with quinine grs. iii, which latter was to be continued at intervals of 4 hours.

June 11th, 8.30 a.m. Temperature 103½. Hectic flush on left cheek; child's eyes bright, glistening; she seems rather wakeful; says she did not sleep much. A more careful physical examination disclosed somesmall râles, very much like a crepitant râle, heard posteriorly about the left lower lobe. Repeat antipyrin grs. vi.

7 p.m. Temperature 105. Lips dry, tongue dry. Patient somnolent. Percussion, posteriorly, revealed now marked dullness over the left lower lobe. Auscultation: tubular breathing over the region of dullness; bronchophony. Cough, dry; not very frequent and not much complained of. Still complains of the pain on the left side, described above.

I now abandoned the former treatment and prescribed:

℞.	Tinct. veratr. virid. (Norwood's)	gtts. vi
	Tinct. aconit. rad	gtts. ii
	Aq. distill	
	Syr. tolut	āā ℥ ss

M. Sig. One teaspoonful as directed.

The directions were that one teaspoonful be given every half hour until 5 doses were given; after that, one teaspoonful every hour until I saw the patient again. 11.45 p.m. Temperature 102½.

June 12th, 10 a.m. Child lively, feels well and wants to get out of bed. She received the medicine every hour till about 3 a.m., and then fell sound asleep and would not be aroused till 8 a.m., then another dose was given her. Cough more frequent, but loose. The pain complained of was entirely gone. As I had compelled the mother to take the child out of the middle room and put her into the airy, well-lighted and much better ventilated front room, the parlor, she was very careful to give the child a spit cup, so that she could not expectorate upon the carpet, and thus it happened that I got a chance to see the expectoration. Looking at it this morning I noticed the characteristic prune juice or "rusty colored" expectoration. Temperature 98¼. Prescribed expectorant mixture of ammon carb. The other medicine omitted.

I kept the child in bed eight days and saw her every day; the temperature remained normal; she was lively, played about in bed, read her books, wanted to study her lessons, but, above all, wanted to get up and help do the work. Anything to get out of bed.

The prune-juice expectoration disappeared on the fourth day from the time it was first noticed.

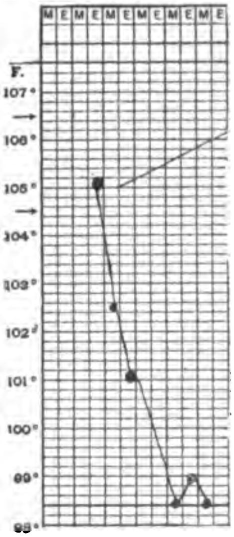
At the end of the week I examined the child again; the dullness over the region described had disappeared altogether; only some moist rales now heard. I allowed her to get out of bed, but insisted that she be kept home from school for another week. Perfect recovery.

GROUP B.

Case I.—Broncho-pneumonia.

(The notes of this case are very brief).

December 27, 1874.—Leonie M., aged 4 years; a stout little girl; the child of well-to-do parents. She always enjoyed good health up to nearly three weeks ago, when she was seized with an attack of bronchitis. There was some fever, but not of high degree, the temperature ranging at no time over 102°. At the end of the time named the temperature had gone down to normal—had been so for the last two days. The cough was loose and not at all frequent, and the child appeared convalescent. She was cheerful, ate fairly well, and wanted nothing more ardently than to get out of bed. As the family wanted as few physician's visits as possible, I informed the mother, on the date named above, that the child being better I should now discontinue my visits. She should keep on with the cough mixture for a few days yet, giving it at longer intervals. Keep the child in bed till to-morrow morning then let her get up, remain up for a few hours and go to bed again. The following day, if she felt like it, she could stay up all day. She should be kept in the house for at least an-



Group B. Case I.

other week; should there be a relapse they should send for me at once.

The same afternoon, about 5.30 p.m., I was sent for; I called about 6.30 p.m. The little girl was in bed, but I was told that shortly after my morning visit she got up without her mothe[illegible] had remained up till about 4 p.m. [illegible] of feeling cold, though her hands burned and her head [illegible] hot, as her mother said.

There was a bright red spot on her left cheek; lips very dry; temperature 105°. There was a very rapid and decidedly tumultuous action of the heart; pulse 160. I examined her further and made a diagnosis of broncho-pneumonia, and prescribed the following:

℞ Infus.[1] digitalis..........(e grs. x ad ℥i) ℥ss.
Liq. ammon. acetat....................℥ss.
(Recente præparat.).

M. Sig.—One teaspoonful every two hours.

At the request of the parents Dr. Wm. Carson was called in consultation that same evening. He saw the case with me about 10 p.m. He concurred in the diagnosis and approved ot the treatment.

December 28th, 9 a.m.—temperature 102½°.
" " 6 p.m.— " 101°
" 29th 9 a.m.— " 98½°.

The child slept well; coughed but very little; she received the medicine but once in the night; give the medicine now every three hours.

8.30 p.m., temperature 99°.

Cough loose and easy, and not frequent; stop the digitalis mixture; prescribed in its stead a cough mixture of spirits of mindererus and syrup of senega.

December 30th, 10 a.m., temperature 98½°; cough nearly all gone. Discharged.

Case 2.—Broncho-Pneumonia.

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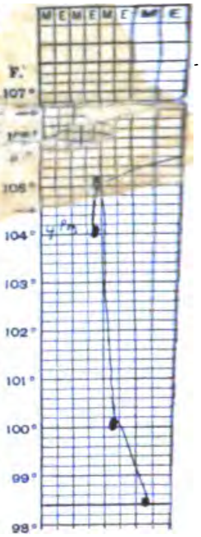
[1] Rather a decoction, as prepared by German pharmacists.

April 23, 1891. 4 p.m. Baby G., child of poor people, aged 22 months; finely developed, and had, according to the mother, been quite stout before his present illness. A week ago he broke out with the measles; the eruption can still be seen on his thighs; in the face it has almost entirely faded. Lies in bed with eyes closed as if asleep, but is extremely restless, tossing about every little while from one side of the bed to the other; lips dry; wants water frequently; will take nothing else. Breathing, very rapid; pulse, 140; temperature 104°.

The room, on the top floor of an old tenement house, is exceedingly hot, everything being kept tightly closed; people told her she must keep the baby warm; cough harsh and dry. Percussion revealed nothing particular. Auscultation: back; sonorous rales on both sides; a mucous rhonchus occasionally heard. Anteriorly, sibilant rales about right supramammary region; not heard on left side; a mucous rale heard here occasionally.



Group B; Case II.

Treatment:

℞	Liq. ammon. acetat. (recent præpar.)	℥i
	Spirit nitr. dulc.	ʒi
	Tinct. aconit. rad.	gtt. ii
	Syr. tolutan	ʒii

M. Sig.—One teaspoonful every two hours.

Also quinine sulph. grs. iiss in acid mixture every three hours; to be sponged with lukewarm water and vinegar every two hours; a window, away from the child, to be opened.

At 10 p.m. the mother came over and said that the child was much worse; I went to the house; temperature of child, 105°. Heart's action very tumultuous. I discontinued the previous medication and ordered the following:

℞	Infus. digital (e grs. x ad ℥i)	ʒivss
	Aq. destill.	ʒiss
	Ammon. carbon	grs. v
	Syr. tolutan	ʒii

M. Sig.—One teaspoonful every two hours.

To be sponged with water from the hydrant.

April 24, 10 a.m. Child much better; temperature 100°; heart's action quiet; cough, soft and loose. The quantity of the infusion of digitalis is now reduced, thus:

℞	Infus. digital. (e grs. x ad ℥i)	ʒiiss
	Aq. destill	ʒiiss
	Ammon. carb	grs. v
	Syr. tolutan	ʒii

M. Sig.—One teaspoonful every two hours.

Continue the quinine every four hours.

April 25.—Temperature 98½°; child lively, bright; eats plays.

My attendance ceased. A few days later I saw the child well and hearty playing about the doorway.

The reason for the division of the cases into two groups, "A" and "B," is at once apparent; it is the difference in the therapeutic agents employed.

It must be admitted here by me that at the time the idea of aborting or jugulating the disease had not entered my mind. When I was recalled to the first case of group B, the earliest period of the time, the prominence of a certain symptom—the tumultuous action of the heart—as recorded in the history, indicated to me the therapeutic agent to be employed, namely, one that would readily and effectively control this action of the heart and bring it within more normal bounds; and it was for the same reason that the same remedy was subsequently prescribed in the second case of this group.

As to group "A." It was while attending the first case of this group when I saw the baby, a youngster in whom I was especially interested, his parents were my friends, I had delivered his mother at the time of his birth, wasting rapidly under the influence of the fever, that the thought occurred to me that to save the baby the fever must be controlled and further wasting thus prevented. But how? The large group of antipyretics we now have was then unknown and the only other agent supposed to possess such powers that we knew of and commonly employed, quinine, had failed altogether. It was then that, guided as already indicated, I was led to the use of the aconite and the veratrum viride. The former described as possessing considerable power in moderating fevers, and the latter a remedy much employed at one time in the treatment of pneumonia,[1] and also used by many very good practitioners in various febrile affections of children.

It was not till I had seen the extraordinary effect of this combination of the two remedies in the 3d attack of Case II. that it occurred to me that with this treatment a pneumonic process could be cut short, and this impression was made a certainty by the very striking result obtained in the case of croupous pneumonia, as already related.

That the medication described did not merely reduce the temperature and leave the pathological process going on in the body unaffected, just as would have been done by a dose or doses of antipyrine, phenacetine or kyrofine, is clearly demonstrated by the histories and graphically shown by the temperature charts. The *temperature was reduced permanently;* there was no further rise, even not after the medicine was stopped. This could result only from an arrest of the inflammatory action. But more than this, the permanent depression of the temperature, the rapid change from a state of grave illness, as shown by all the symptoms and the general appearance of the patient, to a condition of well being as manifested most strikingly in Cases II. (3d attack) and IV., are incontestable proofs of the quick and complete jugulation of the main factors in this morbid process, congestion and inflammation.

As to the modus operandi of these agents, it is not necessary for me to go into details here. These remedies have been so long in our materia medica, are so well known, and their mode of action has been so fully described and so frequently in the numerous treatises and articles, that they are certainly familiar to all.

The only points in this connection I must touch upon are these:

I. In various treatises on pediatrics, in the chapter on treatment, aconite is mentioned as a remedy prescribed by some few, but almost unanimously they warn against its use as being fraught with danger. I had the same feeling at first, and even for a number of years was fearful lest something untoward should happen from this medication; but I now can say that, employed as described and in the dosage mentioned, I never saw the least harm therefrom, nay, more than that, I have never had but the most beneficial results from its use.

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[1] See particularly "A Treatise on Therapeutics and Pharmacology," etc, G. B. Wood, 1860, Vol. II., and "Therapeutics, Materia Medica and Toxicology." H. C Wood, 1874.

II. It is stated in the work on "Therapeutics, Materia Medica and Toxicology[1] by H. C. Wood, Jr., in the article *Veratrum Viride*, under the head Administration, that "it must be borne in mind that it will do no good in acute diseases unless given in increasing doses until its physiological action is manifested." This evidently does not hold good for an administration as here described. In the cases here reported the initial dose was maintained throughout the whole time the medicine was given and proved effective, as clearly shown by the charts.

III. As to the digitalis medication of group "B," the remedy and its mode of action are so well known that nothing further need be said on this head. Only this I would call attention to, that in my experience the infusion, or rather decoction, has a much more decided effect in reducing temperature, coincident with its regulating action upon the heart, than any other of its preparations. I have observed this not alone in cases of the character of group B, but also in other instances. Thus, in one case, a girl of 9, in the initial stage of diphtheria, with a tumultuous, heaving action of the heart, noticeable at quite a distance, and a temperature of 106 degrees in the morning at 8.30, the infusion of digitalis regulated the heart's action and reduced the temperature so that by 7 p.m. it was down to 101; the next morning the temperature was normal and the child up and playing about, though there was quite a diphtheritic patch upon one tonsil.

If the question were asked me "Which of the two forms of medication, that of group A or that of group B is the most effective?" I could not give a direct and positive answer; for, as shown by the histories and the charts, the treatment with digitalis was also very effective in arresting the diseased process in a brief period of time. My opinion, however, based upon the greater number of cases in group A and the greater promptness of effect obtained, is that the combination of the *tincture of aconite root* with the *tincture of veratrum viride* (Norwood's) is the more powerful therapeutic measure and the one I should resort to preferably, though I must confess that with the same condition prevalent as in group B, I should again prescribe the digitalis as I did then.

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[1] Edit. 1874, p. 140;

You will have noted in the histories constituting group A that the intervals was given in brief intervals; in Cases I. and III., young infants, every hour and a half, and in Cases II. (3d attack) and IV. every half hour. I consider this repetition of the medicine at short intervals as of the utmost importance, a vital factor in the achievement of success.

The question of small doses, frequently repeated, has been much discussed and need not be entered into here. I would only recall to you, as a familiar illustration, the decided action of minute doses of calomel given at brief intervals.

To this medication, as to no other, applies the old adage: "Cito, tuto et jecundo." It is *rapid in action*, *it is safe*, and what is a matter of much moment in the treatment of children *it is pleasant to take.*

Protargol is highly esteemed by Dr. Herman B. Sheffield (*N. Y. Med. Jour.*) as a local remedy for vulvovaginitis in children. Although the strength of solution indicated depends upon a number of circumstances, he usually employs 2 per cent. in gonorrheal cases and 1 per cent. in others. Sometimes greater dilution may be required by a very sensitive mucous membrane and, on the other hand, 5 per cent. has been used without any ill results. The exuding pus is first wiped from the orifice of the vagina, which is then repeatedly but gently syringed with a 5 per cent. solution of sodium bicarbonate until no more pus can be washed out. From half an ounce to an ounce of the protargol solution is then introduced by means of a syringe and soft rubber catheter, and is retained in the vagina about five minutes. This process is repeated from three to five times daily. For urethral involvement, the following prescription is used:

℞	Protargol	of each, 12 grn.
	Iodoform	
	Peruvian balsam	6 drops
	Extract belladonna	1 grn.
	Cacoa butter	sufficient

Make twelve crayons 2 inches in length and ⅛ inch in diameter; one to be introduced into the urethra once or twice daily.

This treatment is said to be unirritating and to be followed by the disappearance of the gonococci and most of the discharge in about ten days, after which weaker solutions are used. The entire duration of treatment is said to be about three weeks. Of forty-six cases all but one recovered without developing any complication whatever.—*Mercks Archives*, October, 1900.

MEDICAL SUPERVISION OF GROWING CHILDREN.[*]

By John Madison Taylor, A.M., M.D.,
Philadelphia, Pa.

IT is a curious commentary upon our progressive civilizatian that infants and children receive but meager and utterly inadequate direction in their physical growth, whereas the breeder of domestic animals fully realizes the importance of technically skilled supervision from the prematernal stage all the way to full development, with conspicuous and increasingly good results. For the human young there is yet no such recognition. These domestic animals have steadily improved in many important respects and along carefully foreordained lines, rendering them better fitted to meet requirements thus thoughtfully and practically outlined.

Human beings enjoy no such care unless it be that in school life they are so fortunate as to fall, by some happy accident, into a situation where developmental methods are fairly appreciated. In many of the schools this subject is acquiring some attention, as is plainly shown by excellent results among boys and happily hinted at by the bettered condition in some academies and colleges for girls.

The animal in its wild state, living under the customary and natural conditions, is in a state of perfection. The young live and grow symmetrically; they are in a state of peace, at least as to their subjective conditions and the result is uniformity of development and they thus gain a practical similarity in size, structure, and intelligence. This is true with small limitations of all animals who are not artificially modified by the influence of man. Take as an example the deer of our forests whether absolutely wild or raised in a park. Almost everyone is precisely alike in conformation, proportion, and activity to every other one of its sex and age.

Not so the young of human beings nor domestic animals, and for a large variety of reasons, among which are dissimilarities in environment, food, opportunities for normal activities, hours for rest and recreation, and the warping influences induced by moral and social conditions. For them it is impossible to avoid the changeful impulses due to striving ambitions, even when these are employed only to secure the bare necessities of life. Much more so when, as is usual, the parental tendencies are early imitated which may stimulate worthy desires or the reverse.

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[*] Read before the American Academy of Medicine, Atlantic City, June 2, 1900.

However, it is obvious that a child must require much more than mere opportunities to reach perfection. Not only are these opportunities widely at variance in degree as well as kind, but the normal impulses of the child are not to be depended on to select as well as to pursue the best conditions.

The real need, as shown by the well-proved dicta of Froebel, in the matter of moral and mental training is, that the foundation of progress be laid in the very morning of life. Froebel insists upon beginning his methods between the ages of three and six years, and we would claim that, as a rule, carefully determined plans of physical education should begin quite as soon, or earlier.

The province of the physician is still limited, in great measure, to the relief of actual illnesses. He is called upon first to meet and repair the effects of disease and to aid in the relief of obvious disturbances or deformities or departures from anatomic normalities. He is thus often fortunate in being the first one to note defects in children under observation, or to offer advice as to peculiarities in others of the family thus accidentally revealed.

Although he may have noted some points warranting attention, custom forbids his obtruding his counsel unasked, no self-respecting man will assume the privilege of offering advice in advance of its being sought. And this, moreover, in contrast to the customs of some semicivilized nations, as the Chinese, among whom, rumor reports, that the physician is paid to supervise and maintain in health those under his charge, and suffers a reduction from the regular fees till this repair is duly accomplished. It is obvious then, without enumerating the how and wherefore, that a skilled medical adviser could and would quickly see and correct many conditions thus presented to his observation and privileged control.

The point which seems most difficult to emphasize is that parents do not realize how needful skilled supervision assuredly is during the very earliest developmental and formative epochs. Others as well as myself have repeatedly pointed out the pitiable ignorance of parents as to the physical needs of their children. The parental attitude is almost altogether an accidental one. People marry for instinctive reasons mostly, and children come in the way of nature and are usually secondary considerations or fortuitous accidents; too often a surprise and alas, not always a welcome result, and only rarely do they bring unalloyed joy.

Motherhood comes as a possession, distinction, or martyrdom, as it may be variously viewed by the owner; much trouble and expense is too often taken to avoid the title, or, at least, the frequent repetitions of the blessing. It is safe to assume that few mothers realize their responsibilities; almost none distinctly look forward to the position as worthy of careful thought and special training in the prematernal months. A few wake up to their duties later and hastily devour certain little books called "Mothers' Guides," in the hope of acquiring the wisdom and experience of a lifetime in the perusal of a scant monograph; and even these are usually written by well-intentioned but rarely wise or authoritative persons. And yet upon the guiding brain and heart of the mother will usually depend the fundamental structure building of a sentient being who goes forth as an influence in the land, a factor in the commonwealth; at least, a responsible actor in society.

It is a matter for constant surprise that good results come from such accidental guidance as does ordinarily follow this hap-hazard up-bringing. It is a plain deduction, however, that better citizens would grow from a more skillfully directed start.

The practical point for us to here consider is how can the young child secure the best preparation for life-work in the formative epoch, which is from birth (or shortly before) till capable of acting responsibly by means of its own corrected impulses. Much depends on the state of the mother before the birth of the infant—a long and important story—but briefly this: There must be for her a fair realization of her responsibility. Her life should be guided upon principles of physical conservation and mental tranquility. This involves no sacrifices in the ordinary exigencies of society, except indeed the omission of needless strains and excite-ments, thoroughly possible in whatsoever social plain she exists, even in conditions of actual want.

Each of us enjoys the conviction that he is adequately developed. We may admit that in this or that particular direction we might be improved to advantage, but it is revolting to our consciousness to confess ourselves or our children to be seriously lacking in any important particular. As is true of individuals, so of nations and races. The average of individuals in a particular race marks the type. An estimate of the inherent qualities of this type enables predictions to be made of the power and stability of a people. This study involves a search into the positive qualities and also the negative or degenerative tendencies. Till very recently this last has been done mainly by guessing or along varied lines of probability; nowadays, thanks particularly to the Italian students, we are enabled to learn from scientific sources certain truths and laws. Students of sociology have now an increasingly firm ground on which to test observation and to base conclusions. Among the most important departments of this research is child study, about which a mass of information is now growing up, collected chiefly by certain psychologists and pedagoges which already furnish much data of practical utility.

This supplemented by valuable information on the part of kindergartens, and we may look for great things at their hands in the near future, especially when they, or some of them, more clearly realize the essence of Froebel's concepts; and, above all, when the leaders in this field of thought get rid of an over-exuberant optimism which often mars both their observation and conclusions. Not for one moment would we wish to note a lessing of their faith in human possibilities, for only by an over-stretching of optimism can the highest results be obtained; but for the accuracy of conclusions it is essential to base them upon actualities, not upon desiderata. Again we are about to be materially aided by a new and growing tendency on the part of mothers in all parts of the land to observe and record with loving yet critical care the buddings of the normal consciousness and impulses of their infant treasures, as these grow day by day on their own breasts. So far little, if anything, has been done by these maternal teachers in the way of noting the variations and shortcomings in the subjects. Few mothers are trained to recognize the normal increments of activity, much less to estimate variations fróm the normal. Aside from this most natural limitation, it is not to be expected, however much as it might be hoped that they would or could judge calmly and dispassionately of such shortcomings. And yet consider how invaluable would be information thus afforded to remedy the defects, to apply remedies and afford opportunities for better development of both bodies and minds.

Those of us who believe these things are fully alive to the practical difficulties in the way of formulating any specific recommendations which can be generally accepted by parents.

It is a legitimate conclusion, however, that children fail to receive, in our present state of civilization, the attention to their physical development which they assuredly deserve, and which it fair to assume they will get in the future. This shortcoming is quite as obvious among the well-to-do as the poor for various sociologic and other reasons. Among the poor opportunities are steadily increasing for spontaneous growth and betterment, due to hygienic improvements, municipal and private, and to school supervision. Among the rich this could and should be so amplified by skilful and early direction that families might be made to enjoy a large immunity from many preventable diseases, deformities, organic defects and degenerative tendencies.

Ichthyol is recommended by Dr. T. G. Lusk (*Post-Graduate*, xv., p. 1007) of the New York Post-Graduate Medical School and Hospital, for relieving the pain and preventing the rupture of vesicles in cases of *herpes zoster costalis*. An astringent, antiseptic drying preparation suitable for the purpose may be made as follows, says the author:

Ichthyol	2 fl. dr.
Magnesium carbonate	2 dr.
Zinz oxide	2 dr.
Water	to make 4 fl. oz.

This mixture should be sopped on and a binder applied to prevent rupture from friction. A 5 per cent. ichthyol collodion may also be used with advantage.

EDITORIAL COMMENTS.

The Talking Nurse Again

In our daily papers we regretted exceedingly to notice recently the report of an interview between a trained nurse and a representative of the press in which the former scathingly criticized the treatment of a fatal case of typhoid by a careful and conscientious young surgeon in the navy. What the merits of the case may be is not the matter with which we are at the present moment concerned, but we wish to call attention to the surprise that such action on the part of a *trained* nurse occasioned us. Whatever the treatment may have been, it was not the place of the nurse to criticize it and she widely transgressed the bounds of propriety by doing so. Should such a practice become general, a physician would be afraid to employ a nurse whom he did not know personally lest his reputation be placed in jeopardy, because he did not see fit to treat a case in a manner that accorded with the nurse's views. The nurse is absolutely dependent on the physician for her livelihood and should endeavor, in public at least, to uphold the honor of the medical profession with which she is so closely connected. She must never let the desire to gossip get the better of her sense of duty. She wins no favor with physicians by fouling her own nest for tne sake of transient notoriety. T.

Classical Education for Medical Students

There is a growing tendency to regard Latin and Greek as not essential to medical studies and to deplore the time spent in their pursuit. It is said that for one intending to become a physician the time might be more profitably spent in the study of modern languages and scientific studies closely allied with medicine. This would certainly be in part true if one intended becoming a physician alone and did not contemplate filling a dignified position in society in general. Again, does one know whether he is going to pursue medicine from the commencement of his college course? Is he then capable of judging what profession he intends to follow? Is it not better to acquire a thorough general education first that so important a decision can have something more than a sentimtental basis? Abandonment of the classics and pursuit of collateral sciences with the addition of the study of modern languages might seem more valuable from a purely utilitarian standpoint, but would probably be narrowing in the end. We suspect that some of this opposition to the study of the classics comes from those who, being ignorant thereof, are hardly capable of judging.

A smattering of Latin and a knowledge of the Greek alphabet certainly cannot be of much service in training the mind. Such knowledge is quite useless and only tempts some to use words with which they are unfamiliar and to write prescriptions in a tongue they know not. If classics are studied, let them be thoroughly studied and let Latin feminine plurals to Greek neuter-nouns and mistakes in gender and genitive cease to bring this credit upon many of our otherwise excellent standard text-books. The sciolist who tries to write his prescriptions in Latin may fool the ignorant but pains those who really know. Let us have good Latin or good English. Anatole France in the Paris *Annales Politique et Litteraire* in deploring the passing of the classics, says:

"I bear a desperate affection for Latin studies. I firmly believe that without them the beauty of the French genius is done for. All those of us who have thought somewhat vigorously have learned to think from Latin. I do not exaggerate when I say that that ignorance of Latin is ignorance of the sovereign clearness of expression. All languages are obscure beside Latin. The literature of Latin is more adapted than any other to the cultivation of the mind. In asserting this, I am not deceiving myself regarding the scope of the genius of the compatriots of Cicero; I see their limitations. Rome had simple, strong, and but few ideas. But it is for this very reason that she is an incomparable educator. Since her time humanity has conceived more profound ideas; the world has had a new shudder at the contact with things. But it is also true that, to arm our youth, nothing equals the power of Latin.

Now open the histories of Titus Livy. There everything is well-ordered, lucid, simple. He is not a profound genius; he is a perfect pedagog. He never troubles us; but how logically he thinks! How easy it is to explain his ideas, to examine each part separately and show its relation to the whole! This in regard to form. As to content, what do we find there? Lessons in courage, in devotion, in worship of ancestors, in the cult of fatherland. Here is a true classic! I speak not of the Greeks. They are the flower and the perfume. They have more than virtue; they have taste. I mean that sovereign taste, that harmony which is begotten of wisdom." T.

A case of **Acetanilid Habit** is reported by Dr. G. W. Gaines (*N. Orleans Med. and Surg. Jour.*). The patient was a negro to whom acetanilid had been given several years previously for the relief of an attack of rheumatism from which he suffered. Finding relief while taking the drug, and the pain returned on its being discontinued, the patient began to use the drug regularly every day. During the last several months he has been consuming the acetanilid at the rate of 2 ozs. per week. Whether any ill effects have been noticed the author fails to state.

ABSTRACTS

CONTRIBUTION TO OUR KNOWLEDGE OF PROTEID METABOLISM IN CHILDREN.

F. W. TUNNICLIFFE and OTTO ROSENHEIM (*Brit. M. J.*, Oct. 13, 1900) point out that we know from experience that bread and meat are adequate for the growth of the human child. With regard to the adequacy of milk proteid, or of milk itself, to furnish the nitrogenous constituents necessary for the growth of children during what we may regard as the intermediary period—namely, the period preceding ordinary adult diet, there appears to be very little or no direct physiologico-chemical evidence.

It might seem that the inadequacy of milk as a sole source of proteids depends upon the diluted state in which the proteids are present.

They thought that it would be of interest to determine whether milk proteid was capable of replacing meat in the food of children between 3 and 6 years. For children of this age it might be useful to have a food which, while capable of supplying the necessary nitrogen in convenient bulk, differed to a less degree from the ideal food of the suckling period—namely, milk—than ordinary meat. Such a food might be of especial value in bringing up of delicate children. It was in this connection that plasmon recommended itself especially, being an unaltered milk proteid prepared from skimmed milk upon a large scale.

This substance is prepared from skimmed milk, warmed previously to 70° C., by precipitation of the casein by means of acetic acid (50 per cent.) The precipitated moist mass is then kneaded with an amount of sodium bicarbonate corresponding to that of the acid added. An evolution of CO_2 takes place, and by tnis means a snowy spongy product is obtained which is further dried at low temperature (30 to 40° C.) by means of dry air in a special apparatus, and afterwards reduced to a fine state of division.

The finished product is a yellowish white, fine powder with a feel somewhat like sand, and may be regarded as a natural milk proteid.

Plasmon is without odor or taste when boiled with water, however, it develops a faint milky smell. In sufficient quantities of water, depending upon the temperature, it forms an opalescent solution, showing like milk an amphoteric reaction. Upon the addition of small quantities of cold water it swells up, forming a more or less gelatinous paste. Hot concentrations solidify to a stiff jelly upon cooling. From these properties it follows that it lends itself to cooking manipulations, in that it can be easily admixed with almost any dish without altering its taste or odor, and can further be given according to the temperature at which it is served, in a solid, semi-solid, or liquid form.

Among the many articles of food which may have their nutritive value increased from the proteid standpoint by the addition to them of plasmon, are mentioned the following—bread and biscuits, to which from 10 to 20 per cent. of plasmon may be added, vegetable and meat soups, cocoa and chocolate, etc.

From comparative experiments *in vita* they reach the main conclusions:

First, that the baking of plasmon along with the dough does not affect its digestibility; secondly, that in a given time the quantity of proteids digested in the case of plasmon bread was more than double that of the proteids of whole bread, and about one-third more than that of meat. We can by means of plasmon increase the proteid content of milk almost *ad libitum*, without appreciably increasing its bulk, and further that the digestibility of this fortified milk is not inferior to that of ordinary milk.

Metabolic observances upon two healty children, aged respectively 2½ and 5 years, led them to conclude that in children of these ages milk proteid, both from the point of view of its assimilability and flesh-forming power, is equal to meat.

In another delicate child, aged 3 years, convalescent from pneumonia, metabolic experiments tended to show that milk proteid was better assimilated than meat and that a considerable increase of the amount of phosphorus retained in the body took place during the plasmon period.

"1. Milk-proteid (plasmon) is capable of replacing meat as a nitro genous food in the mixed diet of children according to its nitrogen percentage.

2. A greater increase in body weight took place during the milk-proteid periods in all three cases observed than during the meat periods.

3. The phosphorus of the milk-proteid is capable of being assimilated and retained in the body."

Oxerine Tannate was used by Dr. Prüssian (*Zeitsch f. prakt. Aertz.*, 1900, p. 613) of Wiesbaden, in thirty cases of anorexia. The patients were all children, ranging in age from 22 months to 14 years. Some of them suffered from simple anorexia; in others the anorexia was a symptom of tuberculosis and chlor-anemia. To young children—up to 6 years of age—the remedy was given in the form of chocolate tablets, 4 grs. each, from 1½ to 2 hours before meals. To older children it was administered in powder form, 8 grs. to the dose. All the children took the drug readily and willingly, an important factor in a stomachic intended for children's use. These children all belonged to the poorest class of dispensary patients, and in view of this fact the gratifying results obtained speak all the more strongly for the efficacy of the drug. Of the 30 cases under observation, 23 were distinctly benefited; but in 7 cases no marked improvement could be discerned. These last 7 suffered with well advanced tuberculosis (hemoptysis) and anemia, and were besides entirely neglected by their parents.—*Merck's Archives*, October, 1900.

FOREIGN PEDIATRIC JOURNALS.

Abstracts of all Original Articles that Appear in Foreign Journals Devoted to Pediatrics Under the Charge of George Alexander Saxe, M.D., New York.

REVUE MENSUELLE DES MALADIES DE L'ENFANCE, AUG.-SEPT., 1900. (Continued).

DISCUSSION.

Dr. D'Espine (Geneva) agrees with Dr. Variot as to the frequency of Barlow's disease in some localities, and says this is the case in Geneva. The anemia which he has observed in children fed on sterilized milk when sterilization is carried on as an industry, on a large scale, approaches closely to scurvy; however, sterilized milk may be given, provided it is stopped as soon as it is not digested. Most children digest pure undiluted milk at the age of three months, but many do so only at a more advanced age.

Dr. Marfan (Paris) said that while it is not impossible to fix a uniform standard for dilutions of milk, yet certain figures must be established in order to serve as guide in the experiments which must be made in each individual case. The difference between casein and the soluble proteids of milk is not admitted by such eminent chemists as Duclaux. He distinguishes two varieties of infantile atrophy, namely, the simple, which is benefited by sterilized milk, and the atrophy with cachexia in which no effects are produced by sterilized milk. Nothing can actually replace woman's milk, and nearly all infants fed artificially present a rosary on the rib cartilages.

Dr. Concetti (Rome).—Acidity of milk often causes the difficulties in digestion which are met with in infants. The differences in individual digestive power are very marked in infancy, and all systems of artificial feeding do not make sufficient allowance for this difference. This is the real superiority of the maternal milk, for in the latter the infant finds the same nourishment that has been given to him in utero by the placental circulation.

Dr. Violi (Constantinople) agrees with Dr. Variot that sterilized milk prepared on an industrial scale is superior to that prepared at home by means of the Soxhlet apparatus, provided the business of sterilizing be under competent supervision, and that the milk be dispensed in bottles not exceeding one-half liter in capacity. Sterilized milk may produce digestive disturbances that disappear when the milk is properly diluted.

Dr. **Escherich** (Graz).—Mother's milk probably contains ferments which are not present in cow's milk, and which are necessary for digestion in young infants. The speaker has found after a series of experiments that during the first weeks of life an infant does not require as large an amount of albuminous substances as is usually supposed. He found that a smaller number of calories than that given by Heubner was sufficient in these cases.

Dr. **Sevestre** (Paris).—A certain number of infants, within his knowledge, have done well under artificial feeding, and have developed normally. Sterilized milk in undiluted state, should not always be given to young infants, and he differs in this respect from many of his colleagues. He has repeatedly seen digestive troubles arising from the use of pure sterilized milk in infants, and these disturbances often yielded to a dilution of the milk with one-third or one-fourth of water. Home sterilization, in his opinion gives, as a rule, better results than the industrial process. It is always preferable to add the water before sterilizing, if the milk is to be diluted, and this, of course, can only be done at home for each infant.

Dr. **Seitz** (Munich).—Among 3,000 to 5,000 children who have been fed artificially on sterilized milk, he has seen only 4 cases of Barlow's disease during a period of five years. He cannot, therefore, believe that there is a connection between the use of Soxhlet's method and this disease. Rickets was not less frequent before the introduction of sterilization. For the present, modified sterilization must be employed, especially in the large cities, until we can obtain a pure milk directly from the farm.

Dr. **Schlossmann** (Dresden).—There exist in milk some unknown substances that have specific effects. Probably these are ferments that have as yet escaped isolation by the chemists, and that play an important role in the question of infant feeding.

Dr. **Graanboom** (Amsterdam) studied the value of undiluted milk. As the result of his observations on several hundred children, some of whom have been suffering from digestive disturbances, he finds that infants between the ages of six weeks and one year bear undiluted milk very well, if their digestive apparatus is in a healthy condition, but if digestive disturbances are present, undiluted milk is not well borne. He does not think that Heubner's suggestions are practical, for often an infant is fed with mixtures containing the requisite number of calories, and yet does not gain in weight; while another child, fed with food giving a less number of calories, will increase in weight beyond the normal standard.

Dr. **Jacobi** (New York).—When milk is diluted with decoctions of cereals the casein is precipitated in fine flocculi. Saliva contains a ferment, secreted by the parotid from birth, which digests the amylaceous substances. Hence it is not necessary to wait six months or a year before giving amylacea to an infant.

II. (Second question).—Gastrointestinal Infection in Early Infancy.

1. Dr. **Escherich**, Graz.—The Role of Microbes in Gastrointestinal Affections of Nurslings; Ectogenous Infections and Intoxications. The use of Weigert's fibrin stain for examinations of feces serves to distinguish the bacillus coli and to differentiate it from other germs by means of Gram s method. The cultures on ordinary media are successful in but 5 or 10 per cent. of cases, but by using certain acid media, a great number of germs that occur in infantile feces may be cultivated. The presence of a certain variety of germs staining with Gram's method is particularly noteworthy. These germs correspond morphologically to the majority of bacteria found in normal infantile feces. Gruber-Vidal's reaction is employed in differentiating the species of coli bacillus whose habitat is in the intestine of a particular patient from those whose habitat is in other individuals. Any change in the chemical condition of the intestinal contents is apt to affect the development of the normal flora of the tract, for such a change so alters the resistance of the organism that some one or other species of germs will get an opportunity to develop. The development of each new pathogenic germ in the infantile intestine may give rise to morbid symptoms. The following classification of digestive affections in infants is based upon the etiology of the various types: (1) Intoxications due to ectogenous decomposition. (2) Infection of the chyme. (3) Infectious diseases of the intestinal wall itself. The pathogenic agent that may produce the first two types includes all the saprophytes that occur in milk and in the intestine, the bacterium lactis, the proteolytes and the proteus. Intestinal infection may be caused, in general, by any pathogenic micro-organism. In nurslings a certain number of cases of intestinal infection by the streptococcus, the staphylococcus, the bacillus coli, the streptothrix and the bacillus pyocyaneus are on record. Mixed and secondary infections play a prominent role in the etiology of these diseases.

2. Dr. A. **Baginsky**, Berlin.—Gastroenteritis in Nurslings, particularly from the Anatomo-pathologic Point of View. These affections may be classified as follows from the point of view of pathologic anatomy. (I) Functional disturbances: Acute dyspepsia (II) Organic disturbances. (1) Catarrhal (*a*) Dyspeptic subacute catarrh with hyperemia and cellular infiltration of the mucosa, and a catarrhal secretion. (*b*) Hyperacute catarrh; cholera infantum. Abrasion and destruction of the epithelium, and other lesions of acute catarrhal inflammation. Secondary lesions in other organs. (*c*) Chronic gastrointestinal catarrh. Cellular infiltration, hyperemia, hyperplasia of the mucosa and its glands. (*d*) Athrepsia, or intestinal cachexia. Atrophy of the glandular apparatus of the intestine. (2) Lesions Localized in the Follicular Apparatus. Folliculitis. (*a*) Simple follicular enteritis. (*b*) Severe infectious follicular enteritis; dysentery. (III). Causes of lesions in the affected organs: (*a*) The action of normal intestinal germs whose virulence is exalted for some reoson, e.g., temperature (*b*) the action of toxic products of these germs (*c*) the effect of germs introduced in the intestine in the food and introduced into the in-

testines of the infant. There is no specific germ for the gastroenteritis of infants that occurs in summer under the influence of heat and of other factors. These diarrheal diseases are due to various germs normally existing in the infantile intestine. Yet it has been found that certain germs have a distinct predilection for certain portions of the intestinal apparatus, thus the baccilli are found with greater frequency in the glands of Lieberkuhn, while the cooci prefer the follicular apparatus. IV. Although infectious gastroenteritis that is the result of the action of special germs, such as the pyocyaneous, may occur, they are to be separated from the classification of ordinary summer diarrheas of nurslings. Septicemia as a result of intestinal infection is less frequent than has been hitherto supposed.

3. Dr. Francesco Fede, Naples.—A Study of the Symptoms and Treatment of the Chronic Form of Gastroenteritis in Nurslings. The clinical forms vary according to the intensity, duration, course and character of the affection. The presence of complications of atrophy and of atrophy and of cachexia also add to the gravity of the disease. Among the complications are athrepsia, rickets, sublingual growths (Riga's disease) and tuberculosis. If the chronic gastroenteritis is not cured, the infant dies of a slow progressive cachexia, or of an intercurrent pneumonia, or of some other complicating disease. Hygiene and regimen stand in the front rank of curative measures to be applied in chronic diarrheal affection of nurslings. In the acute exacerbations the use of milk must be entirely suspended and the diet must be a watery one. The substitution of a wet nurse for mixed or artificial feeding and the removal of the infant to a highland, woody region are useful. Elimination and disinfection is secured by means of castor oil, calomel, benzonapthol, lavage with boric acid, carbolic acid, creolin, etc., cleaning out both stomach and intestines. Profuse diarrhea may be checked by the use of astringents, such as lactic acid, hydrochloric acid and preparations of bismuth and tannin. In the painful, nervous forms with marked excitement, poultices and sedatives, such as belladonna, and even opium are indicated. In case there is much depression, aromatic baths and quinine, caffeine, ether, asafetida, musk, and finally injections of artificial serum.

4. Dr. Marfan, Paris.—The Etiology and Pathogenesis of Gastrotroenteritides in Nurslings. While infection plays an important role in the etiology of gastroenteritis in infants, there are other factors besides infection, and frequently the latter intervenes, but secondarily. In studying the bacteriology of these affections, it is necessary always to bear in mind the clinical aspects of the malady, and to use bacteriology only as a help in clinical work. From this point of view the writer classifies the causes of gastroenteritis as follows: I. The predisposing causes are the peculiarities of the digestive apparatus of infancy. II. The exciting causes may be divided into four groups. *A*. Dyspeptic gastroenteritis, due to overfeeding or to wrong methods of feeding. In both instances the gastroenteritis seems to be the result of an endogenous in-

fection and intoxication. *B*. The primary infectious gastroenteritis (ectogenic, following the introduction of microbes by the mouth). The principal source of infection is cow's milk. Mastitis is also sometimes a cause of such infection. The hands of the nurse, the bottles, nipples, etc., especially institutions, hospitals, etc., are also frequent sources of infection, and after weaning the same role is assumed, though to a less marked degree by meat, water and other foodstuffs. *C*. Primary toxic gastroenteritis (ectogenous intoxication) resulting from the introduction into the digestive tract of toxic substances contained in the food. *D*. Secondary gastroenteritis following various diseases, especially measles, influenza, diphtheria, etc. This is due probably to the elimination of germs or of their products by the intestine or the bile ducts, or to derangement of the intestinal functions, which changes the character of the secretions, redogenous intoxication, or finally to the swallowing of septic substances from the respiratory tract. III. The action of the four exciting causes have here been enumerated may be favored by various factors, such as high temperature, cold, dentition, etc. All these favor an infection or an intoxication in one way or another, but the influence of dentition and of cold is disputed by some observers.

DISCUSSION.

Dr. **Marfan** said that while Escherich's classification is very rational. it is not practical. It is impossible to differentiate, in the clinic, affections of the intestinal wall from those of the contents. Neither is there a definite anatomic or bacteriologic distinction between these two types. The intestinal disinfection proposed by Escherich is not practicable. The speaker has, for his own part, adopted the word gastroenteritis, because it is an old term that includes every possible form. It is vague and general, it is true, but it has the advantage in not implying any theory. We may even include under this term those dyspeptic cases that are supposed to be purely functional but in which the lesion is simply imperceptible.

Dr. **Escherich** replied that his classification is not so theoretic and not so difficult to apply in practice as Dr. Marfan seems to think. The presence of infection of chyme is recognizable, particularly through the absence of fever, by the character of the acid diarrhea, the presence of mucus in the stools, and the absence of blood, pus, or desquamation. The parietal infections are different from the chymous and may be recognized in practice by the presence of pus, blood, and microbes in great quantities in the stools, and by a marked desquamation.

Dr. **Marfan** said that he was glad that his remarks elicited the explanation of Dr. Escherich. The chyme infection corresponds in the main to the catarrhal form of his own classification, while the parietal type corresponds to the follicular affections. This classification may therefore be accepted, but are we sure that there is always an infection in the former case and never one in the latter?

Dr. ALVAREZ, in speaking about Dr. Marfan's report, said that he had observed cases of cholera infantum that occurred in spite of the fact that the milk had been sterilized immediately after milking. Two things are certain, namely, that a breast-fed baby never gets cholera infantum and that cholera infantum is more frequent when the milk is impure.

Dr. VARGAS congratulated Dr. Marfan upon his report, but thought that one should not deny absolutely the contagiousness of cholera infantum. He has observed an epidemic of cholera infantum plainly due to contagion. Baginsky has also observed such cases.

Dr. HUTINEL said that we all see too much lesion and too little cause. The latter must be sought in the intestine itself, in the enzyme. The reaction may be more or less profound or superficial, but there cannot be a definite boundary between the parietal and the chymous type.

Dr. ESCHERICH takes exception to the statement of Dr. Baginsky, to the effect that there is something specific in summer diarrhea, and that the colon bacillus acquires an increased virulence as the result of elevated temperature. The increased virulence of the colon bacillus is problematic and, at all events, the probability is that in summer diarrhea there is an infection by one of the numerous pathologic germs that are so abundant in our surroundings and to which the infant's intestine is so susceptible. He insists upon the value of differential stains in distinguishing the colon bacillus in the feces. His classification includes the groups admitted by Baginsky, Marfan, and others, and the only difference is the importance attributed to each group. The distinction between the chymous and the parietal infection is not merely theoretical, but also practical. The chymous infection demands a suppression of milk, purgatives, watery diet; true infection necessitates isolation.

Dr. CONCETTI, Rome, regrets that his chief of clinic, Dr. Valagnisia, is not present, for he had charge of the study of acute intestinal infections in infants. Celli has found that dysentery from colitis is produced by a special variety of the colon bacillus, and particularly by its toxins. Celli has succeeded in immunizing animals with toxi-proteids of the colon bacillus which produces dysentery. An injection of 10 to 20 ccm. of the serum sufficed to produce within twenty-four hours a marked amelioration in the general condition, a disappearance of blood from the stools and a reduction in the frequency of the evacuations. The animals recover within a few days. In three cases in which the injections were of no avail there were other bacteria in the stools, hence the serum is a specific agent. It has proved inefficient in other forms of diarrhea, especially in the catarrhal affections. This proves that dysenteriform colitis is due to a special variety of the bacillus coli communis. In such cases the Gruber-Vidal reaction is positive.

(*To be continued*).

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